

Katajun Lindenberg
Sophie Kindt
Carolin Szász-Janocha

Internet Addiction in Adolescents

The PROTECT Program for Evidence-Based
Prevention and Treatment



Springer

SHOUT
SHARE IT



Internet Addiction in Adolescents

Katajun Lindenberg • Sophie Kindt
Carolin Szász-Janocha

Internet Addiction in Adolescents

The PROTECT Program for Evidence-Based
Prevention and Treatment

Katajun Lindenberg
Institute of Psychology
Goethe-University Frankfurt
Frankfurt, Germany

Institute for Psychology
University of Education
Heidelberg, Germany

Carolin Szász-Janocha
Institute of Psychology
Goethe-University Frankfurt
Frankfurt, Germany

Institute of Psychology
Heidelberg University
Heidelberg, Germany

Sophie Kindt
Institute of Psychology
Goethe-University Frankfurt
Frankfurt, Germany

Institute for Psychology
University of Education
Heidelberg, Germany

ISBN 978-3-030-43783-1 ISBN 978-3-030-43784-8 (eBook)
<https://doi.org/10.1007/978-3-030-43784-8>

© Springer Nature Switzerland AG 2020

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors, and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Foreword

It is hard to imagine daily life without the benefits of electronic media devices: smartphones, tablets, laptops, and personal computers. Recent data indicate that most homes in industrialized countries have at least five screens, and almost every home with children has a gaming device. However, just as it is normal in our society to depend on such devices for work, socializing, and play, many scholars argue that people can also form a harmful *dependency* on these devices. Many have debated the question: Is it fair and valid to say that some people have an addiction to digital technology, or is it simply using it too much? The latter can be hard to judge when screen time recommendations from leading health authorities can appear almost out of touch with our modern world, where a device is never far from children, including school-based settings. We know from decades of research that many people, particularly young people, overuse a range of digital technologies, including gaming, social media, and online versions of activities such as shopping, pornography, and gambling. For some individuals in the most extreme cases, it can be difficult to reduce or stop their involvement in these activities without external intervention or other help.

Our current understanding of how some repetitive Internet use behaviors develop and persist is informed by models of addiction. The basic principle of these models is that these individuals perceive that they have impaired control over their behavior and continue to engage in behaviors despite experiencing harms. This year, the World Health Organization added “gaming disorder” alongside gambling disorder in the category of “disorders due to addictive behaviors” in the International Classification of Diseases (11th revision). Within the two classifications of hazardous gaming and gaming disorder, we find clear descriptions of behaviors that are excessive and generate personal distress and other negative consequences. These classifications were the product of discussions of an extensive body of research and clinical evidence that has accumulated since the 1990s. While the behavioral addictions field continues to grow rapidly, and notably in recent years with the formation of new specialist journals and international conferences dedicated to the topic, the question of how to respond effectively to Internet-related problematic behaviors has not always been clear. Reviews and critiques of the interventions area have identified

weaknesses in study designs and a lack of clarity regarding the effective elements of the intervention in producing lasting behavior change.

It is my pleasure to provide an introduction to a new book on the topic of interventions for problems related to excessive Internet use. This work helps to build our developing evidence base and meet a growing need for prevention of Internet-related problems among the most vulnerable population: young people. The PROTECT model is grounded in concepts from cognitive-behavioral therapy, which is a sensible place to orientate an intervention for addictive behaviors. For all its inconsistencies and limitations, CBT currently has the strongest support from available research on gaming and other Internet-related problems. What I noticed right away in this book (and would consider a strength) was the strong focus on addressing emotion regulation issues as part of the core approach to reducing excessive behaviors. Studies of risk factors for behavioral addictions, including gaming, often report that emotion regulation has a strong predictive link with the development of problematic behaviors. The book's orientation to emotion and coping lends a great deal of flexibility to the intervention, as it may be applied to a broad range of individuals and groups including those who may not necessarily be "addicted" to technologies (and it is recognized that such users may be quite rare) but also to people who may be at risk or beginning to experience some problems with their habits related to these technologies.

Another important aspect of the approach taken in this book is its focus on problem solving. This is complementary to the focus on emotion regulation (building coping skills) and follows recommendations in other related areas (e.g., youth gambling). A benefit of building general problem-solving skills is that these skills may then become applied to the specific problematic behavior in question, without the need of making this explicit connection. This focus is particularly well suited to addressing mental health challenges like behavioral addictions where there may be little agreement between client and family members about the problem and its severity. A common challenge in therapy for young people with technology-based problems is low insight and, in many cases, active resistance to the notion that their Internet use is actually problematic. Therapists who attempt to focus on the gaming or other online behavior as "the problem" may be confronted with denial, frustration, anger or may simply be ignored as the young client disengages from therapy. This is because it is often difficult for some clients to recognize that the behaviors that provide short-term relief from distress may also be the problem (or part of the problem) in need of addressing. Developing core competencies in coping and identifying solutions in difficult situations can provide a valuable foundation for building resilience and engaging in new behaviors that promote psychosocial well-being and that work toward productive future goals that bring personal fulfillment.

In closing, I wish to lend my support to the authors' view that, in many ways, we are at the beginning of studying and responding effectively to excessive online behaviors. More work is needed, from blue-sky research to applied studies and con-

trolled trials, to advance the psychological science of behavioral addictions. This book is a step in the right direction to give readers a clear and simple approach to prevention for young people with excessive online behaviors.

Flinders University
Bedford Park, SA, Australia

Daniel King

Preface

When David's alarm clock rings at 6:30 a.m., he is still tired and not very motivated to get up for school. He starts his day by checking his phone for messages that he got during the night. His friend Anthony texted him at 4 a.m. that he was still gaming and that he will not go to school in the morning. As David thinks about doing the same thing, his mother comes in and tells him to wake up. Only after being reminded three more times, David finally gets up. He is already late for the school bus, so his mother drops him off on her way to work.

During the first period, David is inattentive. He is still thinking about the gaming session from last night. Anthony is so much better than him and David wonders how he will be able to get to the same level. During the break, David discusses new strategies and the latest let's play videos with his classmates. They decide to meet up later that day to play online. David thinks about his soccer practice in the afternoon, but he decides not to go. His mother will get home late anyway, so she will not notice him playing video games all afternoon.

During the following period, David's math teacher reminds the class of the geometry test that is scheduled for next week. David panics, because he has not understood a word of geometry. "Now it's too late to start, anyway," he thinks, and his mind wanders back to his game.

As soon as David gets home from school, he turns on his computer and plays his first round. After that, he thinks about his homework and his math test for a minute, but then he immediately starts the next round and completely forgets about school. He plays for another 3 h and is so immersed in his game that he does not even notice his mother coming home. She asks if he has done his homework and how soccer practice was. David lies to her, telling her that everything is done and that he enjoyed soccer practice. When she asks him to come down for dinner, David ignores her request and continues playing. Finally, his mother gets angry and turns off the Wi-Fi router. David finally goes down to the kitchen. At dinner, he is annoyed by his mother's questions about school, and he is not very talkative. He is reminded of the upcoming math test, but he does not tell his mother about it and goes back to his room. David chats with his friend Anthony via messenger. Anthony's parents are way more relaxed with regard to gaming. He asks him for help with math, but

Anthony has not understood a word of geometry either. David stays on his phone until late at night, watching videos and messaging with his classmates. His soccer coach texted him and asked why he did not come that day. Without answering, David deletes the message.

Digital media are present in all domains of our lives. A day without being connected to the Internet is not imaginable for most of us, especially not for “digital natives” like David and Anthony. Besides the many useful tools and applications that the Internet can provide, it also encompasses the risk of being online too much, too long, and too often. The example of David and Anthony shows that excessive online or gaming behavior can lead to negative consequences in everyday life such as a neglect of other recreational and academic activities resulting in a loss of real-world reinforcement, sleep disorders, negative emotions, and conflicts with family and friends. In severe cases, frequent and intensive online behavior can become addictive, and David and Anthony seem to be at risk for developing a behavioral addiction, specifically, Internet use disorders (IUD).

Originally, addictive disorders have been exclusively related to the intake of psychoactive substances, combined with a loss of control over the consumption as well as negative consequences on important domains of the social, academic, and professional life. However, a growing body of research has demonstrated that certain behaviors, for example, gambling, working, shopping, exercising, Internet use, or video gaming can also have an addictive potential (Bilke-Hentsch, Wölfling, & Batra, 2014). As a consequence, behavioral addictions play an ever-increasing role in the discourse about addictive disorders. In 2018, the World Health Organization (WHO) has decided to introduce a specific category for these types of conditions in the 11th revision of the International Classification of Diseases (ICD-11), namely “disorders due to addictive behaviors.” This category also includes “gaming disorder” as a first Internet-related disorder (World Health Organization, 2018).

The idea that the Internet has an addictive potential was first portrayed in a humorous article by Steven Goldberg (Goldberg, 1995). In response to his article about “Internet addiction,” Goldberg received numerous e-mails reporting real and serious cases of addiction. In 1996, Kimberly Young described the first clinical case of Internet addiction (Young, 1996). Since the 1990s, there has been much progress in the field. Many research articles have been written, treatment institutions for Internet addiction have been opened, intervention and prevention programs have been developed, and the WHO has recognized that addictive behaviors such as excessive (online) gaming can be regarded as clinical disorders.

Internet use disorders can have severe negative consequences for individuals, especially for adolescents and young adults. These include reduced educational and academic perspectives (Beutel, Hoch, Wölfling, & Müller, 2011), impairments in physical and mental health, and conflicts with peers, teachers, and parents (Achab et al., 2011; Carli et al., 2013). Therefore, prevention and early intervention are of very high priority. The importance of these approaches is further highlighted by the large numbers of individuals affected. Prevalence estimates range from 0.7% (Aboujaoude, Koran, Gamel, Large, & Serpe, 2006) to 26.7% in China (Shek & Yu,

2012), depending on the definition and diagnostic criteria (Kuss, Griffiths, Karila, & Billieux, 2014). The phenomenon also produces costs in the medical system, which makes prevention and early intervention a public health issue.

As Internet use disorders are characterized by low treatment motivation and because affected individuals take very long to seek help, low-threshold approaches such as short, systemic interventions are well-suited for prevention and early intervention. This book gives an overview of current research on Internet use disorders and introduces the PROTECT group intervention for indicated prevention and early intervention for adolescents with Internet use disorders. The program has been developed at the University of Education in Heidelberg, Germany and is designed for the application in educational, counseling, and therapy settings. The first part of the book describes

- definitions and diagnostics of Internet use disorders,
- conditions associated with Internet use disorders,
- etiology of Internet use disorders,
- prevention and treatment of Internet use disorders in adolescence, and
- the PROTECT program for prevention and treatment.

According to etiology models, Internet use disorders develop as a consequence of two mechanisms: (1) gratification when using specific Internet applications, leading to an increased Internet use and (2) compensation, resulting from an emotional need caused by the priority shift toward online activities at the expense of pleasant and gratifying real-life activities. The excessive Internet use is maintained as a predominant coping strategy to regulate mood (e.g., to avoid boredom, performance anxiety, or social anxiety) and thus impedes the development of more adaptive strategies.

The PROTECT intervention for the prevention and treatment of adolescent Internet use disorders is based on these models. It uses cognitive-behavioral intervention techniques such as behavioral activation, cognitive restructuring, and emotion regulation strategies. Moreover, it uses rational emotive stories (case examples) which allow addressing adolescents at a low threshold.

In the second part of the book, the PROTECT intervention is described in detail and a practical, user-oriented manual for the implementation of PROTECT in educational, counseling, and therapy settings is provided. The manual is supplemented by (online) material that includes all instructions for PROTECT trainers and worksheets for participants.

The PROTECT intervention targets both gaming addiction and the addictive use of other Internet applications, such as social media. Therefore, the term “Internet use disorders” (IUD) will be used throughout this book in order to describe the phenomenon.

Frankfurt and Heidelberg, Germany

Katajun Lindenberg
Sophie Kindt
Carolyn Szász-Janocha

References

- Aboujaoude, E., Koran, L. M., Gamel, N., Large, M. D., & Serpe, R. T. (2006). Potential markers for problematic internet use: A telephone survey of 2,513 adults. *CNS Spectrums*, 11(10), 750–755.
- Achab, S., Nicolier, M., Mauny, F., Monnin, J., Trojak, B., Vandel, P., ... Haffen, E. (2011). Massively multiplayer online role-playing games: Comparing characteristics of addict vs non-addict online recruited gamers in a French adult population. *BMC Psychiatry*, 11, 144. <https://doi.org/10.1186/1471-244X-11-144>
- Beutel, M. E., Hoch, C., Wölfling, K., & Müller, K. W. (2011). Klinische Merkmale der Computerspiel- und Internetsucht am Beispiel der Inanspruchnehmer einer Spielsuchtambulanz. *Zeitschrift für Psychosomatische Medizin und Psychotherapie*, 57(1), 77–90. <https://doi.org/10.13109/zptm.2011.57.1.77>
- Bilke-Hentsch, O., Wölfling, K., & Batra, A. (2014). *Praxisbuch Verhaltenssucht: Symptomatik, Diagnostik und Therapie bei Kindern, Jugendlichen und Erwachsenen* (1. Aufl.). s.l.: Georg Thieme Verlag KG. Retrieved from <http://dx.doi.org/10.1055/b-002-95255>
- Carli, V., Durkee, T., Wasserman, D., Hadlaczky, G., Despalins, R., Kramarz, E., ... Kaess, M. (2013). The association between pathological internet use and comorbid psychopathology: A systematic review. *Psychopathology*, 46(1), 1–13. <https://doi.org/10.1159/000337971>
- Goldberg, I. (1995). Internet Addiction Disorder (IAD) - Diagnostic Criteria. Retrieved from <http://www-usr.rider.edu/~suler/psycyber/supportgp.html>
- Kuss, D. J., Griffiths, M. D., Karila, L., & Billieux, J. (2014). Internet addiction: A systematic review of epidemiological research for the last decade. *Current Pharmaceutical Design*, 20(25), 4026–4052. DOI:10.2174/13816128113199990617
- Shek, D. T. L., & Yu, L. (2012). Internet addiction phenomenon in early adolescents in Hong Kong. *TheScientificWorldJournal*, 2012, 104304. <https://doi.org/10.1100/2012/104304>
- World Health Organization (2018). *International Classification of Diseases: ICD-11 for Mortality and Morbidity Statistics*. Retrieved from <https://icd.who.int/browse11/l-m/en>
- Young, K. S. (1996). Psychology of computer use: XI. Addictive use of the Internet: A case that breaks the stereotype. *Psychological Reports*, 79(3), 899–902. <https://doi.org/10.2466/pr0.1996.79.3.899>

Contents

Part I Internet Use Disorders in Adolescents

1	Definition and Diagnostics of Internet Use Disorders	3
1.1	Terms and Concepts	3
1.2	Forms of Internet Use Disorders	4
1.2.1	Gaming Addiction	4
1.2.2	Social Network Addiction	5
1.2.3	Online Shopping Addiction	5
1.2.4	Online Gambling Addiction	5
1.2.5	Online Pornography Addiction	6
1.3	Challenges in Diagnosing	6
1.4	Diagnostic Criteria	7
1.5	Diagnostic Instruments	10
1.6	Differential Diagnostics and Comorbidity	10
1.7	Conclusion	12
	References	12
2	Characteristics and Conditions Associated with Internet Use Disorders	17
2.1	Prevalence Estimates of Internet Use Disorders	17
2.2	Associated Symptoms of Internet Use Disorders	17
2.2.1	Individual Characteristics	18
2.2.2	Contextual and Environmental Factors	21
2.2.3	Application-Related Factors	23
2.3	Conclusion	24
	References	24
3	Etiology of Internet Use Disorders	29
3.1	Behavioral Psychology and Neurobiological Etiology Models	29
3.2	Integrated Models and Maladaptive Coping	30
3.3	The PROTECT Etiology Model	32
3.4	Conclusion	34
	References	35

4	Treatment and Prevention for Adolescents with Internet Use Disorders	37
4.1	Introduction	37
4.2	Prevention	38
4.3	Treatment	39
4.4	Conclusion	40
	References	40
5	The PROTECT Intervention	43
5.1	Setting and Target Group	43
5.2	Indication	43
5.3	Methods and Techniques	43
5.3.1	Cognitive Interventions	44
5.3.2	Problem Solving and Behavior Activation	45
5.3.3	Emotion Regulation	46
5.4	Evaluation	46
5.4.1	The PROTECT Efficacy Study	46
5.4.2	The PROTECT+ Study	47
5.5	Conclusion	47
	References	47
Part II	The PROTECT Program for Evidence-Based Prevention and Treatment	
6	Module 1: Boredom and Motivational Problems	51
6.1	Session Procedure	51
6.2	Material (Available Online)	52
6.3	Welcome, Group Rules, and Session Goals	52
6.3.1	Introduction	52
6.3.2	Group Rules	53
6.4	Psychoeducation for Boredom and Internet Use Disorders	53
6.4.1	Pros and Cons	53
6.4.2	Keeping Balance	56
6.4.3	Case Example “Toni is Bored”	58
6.4.4	Vicious Circle	59
6.4.5	Metaphorical Lead Figure: The Chameleon	62
6.5	Identifying and Restructuring Unfavorable Cognitions	64
6.5.1	Reality Check	64
6.5.2	Thought Stopping	68
6.6	Problem-Solving Skills and Behavior Activation Training (Change Plan)	69
6.7	Homework and Conclusion	73
6.7.1	Homework	73
6.7.2	Conclusion	73
	References	74

7	Module 2: Performance Anxiety and Procrastination	75
7.1	Session Procedure	75
7.2	Material (Available Online)	75
7.3	Welcome, Revision, Homework, and Session Goals	76
7.4	Psychoeducation for Performance Anxiety and Procrastination	77
7.4.1	Keeping Balance	77
7.4.2	Case Example “David Has the Jitters”	78
7.4.3	Vicious Circle	81
7.5	Identifying and Restructuring Unfavorable Cognitions	84
7.5.1	Reality Check	84
7.5.2	Thought Stopping	86
7.6	Problem-Solving Skills and Behavior Activation Training (Change Plan)	88
7.7	Homework and Conclusion	92
7.7.1	Homework	92
7.7.2	Conclusion	93
	References	93
8	Module 3: Social Anxiety	95
8.1	Session Procedure	95
8.2	Material (Available Online)	95
8.3	Welcome, Revision, Homework, and Session Goals	96
8.4	Psychoeducation for Social Anxiety and Internet Use Disorders	97
8.4.1	Keeping Balance	97
8.4.2	Case Example “Leila is Looking for Friends”	98
8.4.3	Vicious Circle	101
8.5	Identifying and Restructuring Unfavorable Cognitions	105
8.5.1	Reality Check	105
8.5.2	Thought Stopping	107
8.6	Problem-Solving Skills and Behavior Activation Training (Change Plan)	109
8.7	Homework and Conclusion	112
8.7.1	Homework	112
8.7.2	Conclusion	113
	References	114
9	Module 4: Emotion Regulation	115
9.1	Session Procedure	115
9.2	Material (Available Online)	115
9.3	Welcome, Revision, Homework, and Session Goals	116
9.4	Psychoeducation for Emotion Regulation and Internet Use Disorders	117
9.4.1	The Star of Emotions	117
9.4.2	The Satellite	117
9.4.3	Why do we Need Emotions?	120

9.4.4	Which Functions do the Different Emotions Have?	120
9.4.5	Which Characteristics do Emotions Have?	122
9.5	Emotion Regulation Strategies.	123
9.5.1	Functional Emotion Regulation Strategies	123
9.5.2	The Box of Tricks	124
9.5.3	Training of Emotion Regulation	124
9.6	Conclusion	130
	References.	130
Appendix		131
Index		203

About the Authors

Katajun Lindenberg, Ph.D., professor for clinical child psychology and psychotherapy and head of the outpatient psychotherapy unit for children and adolescents at the Goethe-University Frankfurt, Germany.

Sophie Kindt, M.Sc., research associate and clinical psychologist. Her research focuses on Internet use disorders, prevention, and risk factors.

Carolín Szász-Janócha, M.Sc., research associate and clinical psychologist at the Goethe-University Frankfurt, Germany. Her research focuses on Internet use disorders, treatment, and risk factors.

Part I
Internet Use Disorders in Adolescents

Chapter 1

Definition and Diagnostics of Internet Use Disorders



1.1 Terms and Concepts

In the early phase of research on pathological video game and Internet use starting in the 1990s, different definitions were used because standard diagnostic criteria were lacking. While some researchers categorized the phenomenon as an impulse control disorder, similar to pathological gambling (Beard & Wolf, 2001; Shapira et al., 2003; Young, 1998b), others defined it as an addictive disorder, i.e. a behavioral addiction (King, Delfabbro, Griffiths, & Gradisar, 2011; Kuss & Griffiths, 2012). In the literature, different terms have been used to describe the maladaptive use of video games and the Internet, such as “video game addiction” (Fisher, 1994), “compulsive Internet use” (Greenfield, 1999), “pathological Internet use” (Davis, 2001), “problematic Internet use” (Shapira, Goldsmith, Keck, Khosla, & McElroy, 2000), or “Internet addiction” (Young, 1998b). Another controversy concerns the question whether the Internet itself can be addictive, or whether the addictive or pathological use is related to specific Internet applications, such as social networks, online games, online shopping, or online pornography (Davis, 2001; Griffiths, 2000; Rehbein & Mößle, 2013; Starcevic & Aboujaoude, 2017). Davis (2001) differentiates between “specific pathological Internet use,” i.e. the use of one specific application and “generalized pathological Internet use,” a multidimensional use that encompasses a general desire to escape into the virtual world. In this book, the term “Internet use disorders” (IUD) is used to describe the phenomenon, as it encompasses both the addictive use of video games (gaming addiction) and the addictive use of other Internet applications (e.g., social media addiction).

1.2 Forms of Internet Use Disorders

Internet use disorders can have several forms, with the most commonly used applications among adolescents being video games and social networks.

1.2.1 *Gaming Addiction*

Video gaming, online and offline, is especially prevalent among male adolescents (see Chap. 2). Especially massively multiplayer online role-playing games (MMORPG) have a high addictive potential. However, other genres such as multiplayer battle arena games (MOBA) also contain features that facilitate the development of a behavioral addiction (Beutel, Hoch, & Wölfling, 2011; Illy & Florack, 2018; Müller & Wölfling, 2017). These games are all played online, together with others, which makes them highly communicative. Gamers join forces in teams or guilds, they explore an infinite fantasy world and solve tasks (“quests”) together. This causes a sense of social responsibility and belonging, making it hard not to show up online when a quest is to be completed. The opportunity to play against other gamers from anywhere in the world is an attractive challenge for many. Furthermore, these genres often include a nonlinear progress, i.e. quests become more and more difficult as the game progresses, and more and more time needs to be spent on progressing. Players are represented by the game characters, known as avatars, who develop their personal resources and abilities over the course of the game. The avatar allows for an ideal self-representation, which is especially attractive for those who do not experience success in real life. The high level of identification with the avatar leads to an experience of immersion and a strong identification with this virtual self. A functional magnetic resonance imaging (fMRI) study by Leménager et al. (2014) demonstrated that addicted gamers had a stronger emotional identification with their avatar than with a picture of themselves.

Another mechanism that increases the addictive potential of video games is intermittent reinforcement. During intermittent reinforcement, behaviors are not rewarded every time they occur. Rather, the frequency and contingency of rewards is unpredictable. One example of a gaming mechanism with intermittent reinforcement is a loot box—a treasure chest that can be bought for a small amount of money and that contains either valuable items for the avatar or completely useless items. This mechanism is very similar to gambling as it makes loot boxes a game of chance (Griffiths, 2018).

Many modern online games are “free-to-play,” which means that it does not cost any money to start playing the game. However, some of them include “pay-to-win” mechanisms that allow the player to spend money for faster progress in the game. These are generally micro-transactions of real money or an in-game currency. This mechanism often tempts gamers to spend large sums in these games, which can be

especially problematic for those who are addicted and are no longer in control of their own gaming and spending behavior (Dreier et al., 2017).

To date, most research about online addictions has focused on online gaming behavior. As a consequence, the World Health Organization (WHO) has included “gaming disorder” as a diagnosis in the ICD-11. Other forms of addictive Internet use have not been included yet.

1.2.2 Social Network Addiction

The excessive use of social networks is another risk behavior that can lead to a behavioral addiction. While boys are more often affected by an addictive consumption of video games, girls spend more time on social networks and thus are more prone to developing a social media addiction (Rehbein & Mößle, 2013). Just like avatars in the world of online games, social network profiles allow for an idealized self-representation. The possibility to communicate with others via online messengers from a safe distance makes it much easier for the introverted person to seek contact. Moreover, the possibility to like and dislike as well as to share and comment leads to social comparison processes that bind the user to the network and increases the risk of an addictive use.

1.2.3 Online Shopping Addiction

Another online activity that can take addictive forms is compulsive online shopping, in which individuals buy items that they do not need and that often remain unpacked. For many, the act of buying is experienced as highly rewarding, not the fact of possessing a new item itself (Müller et al., 2012). Online shopping addiction could merely be an online manifestation of compulsive buying, but in many cases, the online aspect per se is problematic because it increases anonymity. Affected individuals experience a loss of control over their buying behavior, a compulsive preoccupation with special offers, and a continuation of the behavior despite negative consequences, such as financial problems or debt. Risk factors for online shopping addiction are female gender, reduced self-worth, increased impulsivity, and a strong materialistic orientation (Rose & Dhandayudham, 2014).

1.2.4 Online Gambling Addiction

Another behavioral addiction, that has taken a new form since the rise of the Internet, is online gambling. The web has made gambling more easily accessible than it has been before. The drive to the casino was a hurdle for many, especially for underage

persons who are not allowed to enter them. Online gambling offers a variety of possible games (many gamblers play multiple games simultaneously) as well as anonymity and fast rewards. Furthermore, the use of virtual money makes it easier to spend, and losses are not experienced as directly (Griffiths & Parke, 2010).

1.2.5 Online Pornography Addiction

Last but not least, online pornography addiction is an increasing problem among all age groups (Müller & Wölfling, 2017). According to the authors, individuals suffering from this form of behavioral addiction are mostly males. The main reasons for seeking help are spousal conflicts when the partner discovers the excessive use of pornographic material (Müller & Wölfling, 2017). However, it can be assumed that many affected individuals do not seek help because of stigma. The consumption of pornographic material via the web, generally associated with masturbation, is a new form of sexual behavior that adolescents are confronted with at an early age. In most addicted individuals, pornographic images or videos that are consumed become “heavier” over time because the “normal” pornographic material is no longer experienced as arousing. Many adolescents who show excessive consumption of online pornographic material do not learn how to establish and maintain real intimate relationships and to experience pleasure in real sexual intercourse.

1.3 Challenges in Diagnosing

The assessment of different forms of Internet use disorders is associated with several challenges: First, unlike physical conditions or substance-related addictive disorders that are often directly related to a change in biochemical parameters of the blood or other test results, behavioral addictions are more difficult to diagnose. The clinician needs to carefully explore the behavioral, cognitive, and emotional indicators reported by the patient. These indicators must then be aligned with previously defined diagnostic criteria. In the past, the amount of time spent online has been used as an indicator for pathology. Obviously, individuals who spend large parts of their day in the virtual world are at increased risk to develop an addiction. More recent research shows, however, that the amount of time spent online per se is not sufficient to define a disorder (Israelashvili, Kim, & Bukobza, 2012).

Second, the diagnosis among adolescents is further complicated by the general tendency of pubescent teenagers to engage in excessive behavior and to desire autonomy. As “Digital Natives,” adolescents move freely in a world that is less familiar to older generations. Additionally, psychological problems in adolescence always need to be considered from a developmental psychology perspective as growing older might entail natural changes in (gaming) behavior. Neurobiological maturation of the adolescent brain involves specific behavior characteristics such as

increased impulsivity and a tendency to risky behavior such as taking drugs or excessive video gaming. However, this does not mean that Internet use disorder is a transitional phenomenon which disappears over time (Müller, 2017). Many adults who seek treatment for Internet use disorders report periods of heavy Internet use in their adolescent years. Clinical case reports indicate that heavy Internet use in adolescence may be a risk factor for later Internet use disorders (Müller & Wölfling, 2017). This highlights the importance of profound psychological diagnostics in this young age group.

1.4 Diagnostic Criteria

The publication of the fifth edition of the Diagnostic and Statistical Manual for Mental Disorders (DSM-5) in 2013 provides a first consistent definition. The DSM-5 includes “Internet gaming disorder” in part three as a diagnosis for further research. This diagnosis, however, only encompasses the pathological use of online video games. The excessive use of other online applications is not included (American Psychiatric Association, 2013).

To establish a diagnosis of Internet gaming disorder, a minimum of five out of nine criteria must be present over a period of 12 months. The DSM-5 criteria for Internet gaming disorder are closely linked to those of substance-related disorders, but also share some features with impulse control disorders, especially pathological gambling. They are defined as follows:

1. *Preoccupation with games.* Pathological video gamers are often mentally preoccupied with their games, even when not actively gaming. For example, affected students might think about the next steps or quests in the game instead of paying attention in class. The gaming activity consumes a great cognitive capacity which cannot be allocated to other tasks. The individual is not only occupied with gaming in his or her free time, but also arranges all other activities around gaming activities.
2. *Withdrawal symptoms when not playing games.* Psychological signs of withdrawal can often be observed in gaming addiction. These include feelings of depression, anxiety, or anger when gaming is impossible, or when individuals try to cut down on their gaming behavior. Although craving, a common aspect of substance-related addictive disorders that is associated with withdrawal is not explicitly included in the diagnostic criteria, it might play an important role in Internet gaming disorder as well (Ko et al., 2014; Müller & Wölfling, 2017).
3. *Tolerance.* Even though the amount of time an individual spends on gaming is not sufficient to define Internet gaming disorder, an increase in time spent on gaming can be relevant. Addicted gamers often report the need to spend more and more time gaming. However, this notion is highly debated. King, Herd, and Delfabbro (2018) argue that time cannot be applied in analogy to increased amounts of psychoactive substances in substance-related disorders. Instead, it is the increased desire for in-game items, status, or story progress, or the feeling of

inadequacy that motivates players to spend more and more time playing video games.

4. *Unsuccessful attempts to stop or control gaming.* The intense urge or craving for the game in individuals with Internet gaming disorder can lead to difficulties in behavior control. Even though many try to cut down on gaming (or are requested to do so by their parents), they often return to the initial gaming behavior. The decision to discontinue a gaming session is no longer a conscious choice, as behavioral control is reduced. The phenomenon of immersion further aggravates the loss of control. Individuals are so absorbed by their gaming activity that they lose their sense of time and are often surprised when they realize how long they have been playing (Lehenbauer-Baum & Fohringer, 2015; Müller, 2017).
5. *Loss of interest in other recreational activities than gaming.* Pathological gamers often report little or no interest in other recreational activities besides gaming. They withdraw from social interactions, which often results in isolation. This effect can be explained by modifications of the dopamine system that are associated with addictive disorders (Robinson & Berridge, 2003). Gaming becomes so rewarding that other activities and even primary needs like food intake or sleep become less and less important.
6. *Continuation of gaming behavior despite psychosocial problems.* Like many mental disorders, Internet gaming disorder is characterized by detrimental effects in the social and occupational domain, such as financial problems, performance deficits, a drop of school grades, or family problems. However, many affected individuals ignore or accept these consequences and continue their dysfunctional behavior.
7. *Lying and deceit of others about the amount of gaming.* Especially adolescent gamers often disguise their true gaming behavior, for example by playing during the night.
8. *Use of games to escape from negative mood or real-life problems.* The use of video games to forget about problems or to escape from negative emotions is very prevalent in addicted gamers. However, even non-addicted gamers often use video games to regulate their emotions. Therefore, this criterion does not seem to be very specific to diagnose Internet gaming disorder (Rehbein, Kliem, Baier, Möble, & Petry, 2015).
9. *Loss or risk of losing important relationships, career, or educational opportunities as a result of gaming behavior.* Individuals with Internet gaming disorder are at an increased risk to lose important relationships as well as educational or career opportunities. In students, a significant deterioration of grades is often observed. Affected adults might lose their job or miss out on promotions.

In the years following the publication of the DSM-5, research focused on an empirical evaluation of the proposed diagnostic criteria as well as on the development of new diagnostic instruments. The specific criteria for Internet gaming

disorder seem to differ in their relevance for the diagnosis as a whole (Király, Griffiths, & Demetrovics, 2015; Ko et al., 2014; Lemmens, Valkenburg, & Gentile, 2015; Rehbein, Kliem, et al., 2015). While “loss or risk of losing important relationships, career, or educational opportunities,” “continuation of gaming behavior despite psychosocial problems,” “loss of interest in other recreational activities than gaming,” “tolerance,” and “withdrawal” are highly related to the diagnosis (Ko et al., 2014), “use of games to escape from negative mood or real-life problems” and “preoccupation with games” have a rather small discriminant validity (Rehbein, Kliem, et al., 2015). “Lying and deceit of others about the amount of gaming” only seems to be specific in adolescent, but not in adult addictive gamers. This may be explained by the increased need to disguise the actual gaming behavior when being supervised by parents. The cut-off of five criteria seems to be valid (Ko et al., 2014).

Petry et al. (2014) addressed the question of how to assess Internet gaming disorder according to the DSM-5 criteria and established an international consensus. Several researchers (e.g., Cho, Kwon, & Choi, 2014; Király et al., 2017; Pontes & Griffiths, 2017) have developed and validated questionnaires for Internet gaming disorder.

The DSM-5 Internet Gaming Disorder diagnosis and its criteria were critically discussed, especially with regard to the risk of “over-pathologizing everyday life” (Billieux, Schimmenti, Khazaaal, Maurage, & Heeren, 2015) and the stigmatization of healthy but engaged video gamers as “addicted” (Lehenbauer-Baum et al., 2015; Lehenbauer-Baum & Fohringer, 2015). Other researchers argued that a diagnosis of Internet gaming disorder alone falls short because of the exclusion of the pathological use of other Internet activities (Musetti et al., 2016; Musetti & Corsano, 2018) or because it is too closely related to substance-related disorders and pathological gambling (Kardefelt-Winther, 2015).

Despite these critical voices, gaming disorder has been included as a diagnosis in the new version of the International Classification of Diseases (ICD-11), published in June 2018 (Luciano, 2015; World Health Organization, 2018).

In the ICD-11 (World Health Organization, 2018),

Gaming disorder is characterized by a pattern of persistent or recurrent gaming behavior (‘digital gaming’ or ‘video-gaming’), which may be online (i.e., over the internet) or offline, manifested by:

1. impaired control over gaming (e.g., onset, frequency, intensity, duration, termination, context);
2. increasing priority given to gaming in the sense that gaming takes precedence over other life interests and daily activities; and
3. continuation or escalation of gaming despite the occurrence of negative consequences. The behaviour pattern is of sufficient severity to result in significant impairment in personal, family, social, educational, occupational or other important areas of functioning.

The pattern of gaming behavior may be continuous or episodic and recurrent. The gaming behavior and other features are normally evident over a period of at least 12 months in order for a diagnosis to be assigned, although the required duration may be shortened if all diagnostic requirements are met and symptoms are severe.

Again, the diagnosis of gaming disorder has been highly debated in the scientific community. While some authors argue that gaming disorder is a significant health concern and a burden for society (Griffiths, Kuss, Lopez-Fernandez, & Pontes, 2017; Király & Demetrovics, 2017; Lee, Choo, & Lee, 2017; Saunders et al., 2017; Shadloo et al., 2017; Van den Brink, 2017), others believe that a diagnosis is premature and might lead to a stigmatization of healthy gaming behavior as well as to “moral panics” and “abundant false positive cases” (Aarseth et al., 2017; James & Tunney, 2017). As most health care systems around the globe are based on the ICD and because treatment can only be provided if a diagnosis is established, the inclusion of gaming disorder in the ICD-11 can improve access to healthcare services for many affected individuals.

1.5 Diagnostic Instruments

Various diagnostic instruments have been developed to assess Internet use disorders. Most instruments have satisfying reliability (internal consistency coefficients) and construct validity, but many lack external and clinical validity (King, Haagsma, Delfabbro, Gradisar, & Griffiths, 2013; Laconi, Rodgers, & Chabrol, 2014; Lortie & Guitton, 2013). Moreover, most instruments do not provide a norm sample, which impedes their application in a clinical context.

Additionally, some diagnostic interviews were developed after the emergence of the DSM-5 Internet gaming disorder criteria (Koo, Han, Park, & Kwon, 2017). Table 1.1 displays the most commonly used psychometric instruments for Internet use disorders, including information on their psychometric properties.

A profound diagnostic process encompasses at least one psychometric questionnaire and, if indicated, a structured clinical interview. Caution has to be taken when assessing the amount of time spent on the Internet or on gaming as many affected individuals lose their sense of time while gaming (known as immersion). Gaming diaries or apps tracking the amount of time spent online or on a specific application can help to achieve a more realistic evaluation. Furthermore, differential diagnostics are essential because Internet use disorders are often associated with comorbid mental disorders.

1.6 Differential Diagnostics and Comorbidity

Research shows that comorbid mental disorders are very common in Internet use disorders (Carli et al., 2013). Most often, affected individuals suffer from depression and anxiety disorders as well as from attention deficit hyperactivity disorder (ADHD). The latter is especially common among adolescents and could be explained by a generally increased tendency of individuals with ADHD to develop an addiction (Wilens, 2004). Another explanation lies in the configuration of stimuli and rewards in video games: Due to the very short delay of gratifications, gaming is

Table 1.1 Diagnostic Instruments for Internet Use Disorders

Diagnostic instrument	Authors	Description	Psychometric properties	Clinical cut-off/norm sample
Compulsive Internet Use Scale (CIUS)	Meerkerk, van den Eijnden, Vermulst, and Garretsen (2009)	• 14 item-questionnaire • 5 dimensions of compulsive Internet use (loss of control, preoccupation, withdrawal, conflict, coping) • Tested in large general populations ($N = 17,000$)	• Test-retest reliability: $r = 0.83$ • Internal consistency: $\alpha = 0.90$ • Convergent validity: time spent online: $r = 0.42$; feeling of being addicted: $r = 0.52$	• Cut-off: 28
Video Game Addiction Test (VAT)	van Rooij, Schoenmakers, van den Eijnden, Vermulst, and van de Mheen (2012)	• 4-item questionnaire • Items are adapted from CIUS for gaming • one-dimensional scale	• Internal consistency: $\alpha = 0.93$ • Validity: Correlation with GAS ($r = 0.74$) and CIUS ($r = 0.61$); small correlations with scales measuring psychosocial Well-being and the time spent on various game types ($r = 0.22$ to $r = 0.37$)	• No cut-off reported
Video Game Dependency Scale (CSAS-II)	Rehbein, Baier, Kleimann, and Mößle (2015)	• 18-item questionnaire • Includes self-rating and rating by a family member • Assesses DSM-5 criteria of internet gaming disorder	• Internal consistency: $\alpha = 0.94$ • Validity: Significant correlation with usage times ($r = 0.51$)	• Gender and class level-specific norms
Internet Addiction Test	Young (1998a); Widianto and McMurran (2004)	• 20-item questionnaire • Follows criteria for substance dependence and pathological gambling of DSM-IV. • Includes six factors (salience, excessive use, neglecting work, anticipation, lack of control, neglecting social life)	• Internal consistency: $\alpha = 0.54$ to $\alpha = 0.82$	• 20–39 points: Average online user • 40–69 points: Frequent problems due to Internet usage • 70–100 points: Internet is causing significant problems
Short Internet Addiction Test (s-IAT)	Pawlikowski, Alistätter-Gleich, and Brand (2013)	• 12-item version of the IAT • Two factors (loss of control/time management and craving/social problems)	• Internal consistency: $\alpha = 0.74$ to $\alpha = 0.90$ • Convergent construct validity: CIUS ($r = 0.90$)	• No cut-off reported
Assessment for Computer and Internet Addiction-Screener (AICA-S)	Wölfling, Müller, and Beutel (2010)	• 16-item questionnaire • Based on criteria of substance dependence (DSM-IV-TR and ICD-10)	• Internal consistency: $\alpha = 0.89$ to $\alpha = 0.91$ • Sensitivity = 0.81 • Specificity = 0.82	• 7 points: Indicator for addictive use
Structural Clinical Interview for Internet Gaming Disorder (SCI-IGD)	Koo et al. (2017)	• Diagnostic interview with 12 items according to DSM-5 Internet gaming disorder criteria	• Test-retest reliability: PABAK = 0.41–0.91 • Internet gaming disorder group had higher scores on depression, anxiety, conduct problems, attention problems, and difficulties in emotional regulation than non-disordered group • Sensitivity = 0.57 • Specificity = 0.96	• 5 criteria of Internet gaming disorder

Note. GAS = Game Addiction Scale, PABAK = Prevalence-Adjusted Bias-Adjusted Kappa

experienced as highly rewarding. This motivates gamers to continue playing, especially individuals with ADHD, who often have difficulties delaying gratifications. Success in video games may then compensate for a lack of success in real life and further heighten their appeal. Reduced impulse control and increased sensation seeking in ADHD could be mediating factors in the association between ADHD and Internet use disorders (Frölich, Lehmkuhl, & Döpfner, 2009).

When considering comorbidity, it is essential to determine whether Internet use disorders are the primary problem, or rather a “side effect” of another mental disorder. For example, social withdrawal in depression can be associated with increased Internet use. In this case, treating the depression may solve the secondary problem of excessive Internet use. On the other hand Internet use disorders can be causal for other mental disorders such as depression as well or aggravate their symptoms. It is therefore crucial to assess the temporal sequence of both problem areas.

1.7 Conclusion

The definition of Internet use disorders has been a controversial issue for a very long time as a unitary definition approach was missing. The publication of the DSM-5 and the ICD-11 brought some clarification in this field with the definition of “Internet gaming disorder” and “gaming disorder,” respectively. While there are now criteria for gaming-related Internet use disorders, other forms of Internet use disorders are still not included in diagnostic manuals. Thus, more research needs to be conducted in this field. Moreover, different diagnostic instruments have been developed in the past years to assess Internet use disorders. A crucial issue in the scope of the diagnostic procedure is taking comorbid disorders into account.

References

- Aarseth, E., Bean, A. M., Boonen, H., Colder Carras, M., Coulson, M., Das, D., et al. (2017). Scholars’ open debate paper on the World Health Organization ICD-11 gaming disorder proposal. *Journal of Behavioral Addictions*, 6(3), 267–270. <https://doi.org/10.1556/2006.5.2016.088>.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, TX: American Psychiatric Publishing.
- Beard, K. W., & Wolf, E. M. (2001). Modification in the proposed diagnostic criteria for Internet addiction. *Cyberpsychology & Behavior*, 4(3), 377–383. <https://doi.org/10.1089/109493101300210286>.
- Beutel, M.E., Hoch, C., Wölfling, K., & Müller, K. W. (2011). Klinische Merkmale der Computerspiel- und Internetsucht am Beispiel der Inanspruchnehmer einer Spielsuchtambulanz. *Zeitschrift für Psychosomatische Medizin und Psychotherapie*, 57(1), 77–90. <https://doi.org/10.13109/zptm.2011.57.1.77>
- Billieux, J., Schimmenti, A., Khazaal, Y., Maurage, P., & Heeren, A. (2015). Are we overpathologizing everyday life? A tenable blueprint for behavioral addiction research. *Journal of Behavioral Addictions*, 4(3), 119–123. <https://doi.org/10.1556/2006.4.2015.009>.

- Carli, V., Durkee, T., Wasserman, D., Hadlaczky, G., Despalins, R., Kramarz, E., et al. (2013). The association between pathological internet use and comorbid psychopathology: A systematic review. *Psychopathology*, 46(1), 1–13. <https://doi.org/10.1159/000337971>.
- Cho, H., Kwon, M., Choi, J.H., Lee, S.K., Choi, J. S., Choi, S.-W., & Kim, D.J. (2014). Development of the Internet addiction scale based on the Internet Gaming Disorder criteria suggested in DSM-5. *Addictive Behaviors*, 39(9), 1361–1366. <https://doi.org/10.1016/j.addbeh.2014.01.020>.
- Davis, R. A. (2001). A cognitive-behavioral model of pathological internet use. *Computers in Human Behavior*, 17(2), 187–195. [https://doi.org/10.1016/S0747-5632\(00\)00041-8](https://doi.org/10.1016/S0747-5632(00)00041-8).
- Dreier, M., Wölfling, K., Duven, E., Giral, S., Beutel, M. E., & Müller, K. W. (2017). Free-to-play: About addicted Whales, at risk Dolphins and healthy Minnows. Monetization design and internet gaming disorder. *Addictive Behaviors*, 64, 328–333. <https://doi.org/10.1016/j.addbeh.2016.03.008>.
- Fisher, S. (1994). Identifying video game addiction in children and adolescents. *Addictive Behaviors*, 19(5), 545–553. [https://doi.org/10.1016/0306-4603\(94\)90010-8](https://doi.org/10.1016/0306-4603(94)90010-8).
- Frölich, J., Lehmkuhl, G., & Döpfner, M. (2009). Computerspiele im Kindes- und Jugendalter unter besonderer Betrachtung von Suchtverhalten, ADHS und Aggressivität. *Zeitschrift für Kinder- und Jugendpsychiatrie und Psychotherapie*, 37(5), 393–402.; quiz 403–4. <https://doi.org/10.1024/1422-4917.37.5.393>.
- Greenfield, D. N. (1999). Psychological characteristics of compulsive internet use: A preliminary analysis. *Cyberpsychology & Behavior*, 2(5), 403–412. <https://doi.org/10.1089/cpb.1999.2.403>.
- Griffiths, M. D. (2000). Does Internet and computer ‘addiction’ exist? Some case study evidence. *Cyberpsychology & Behavior*, 3(2), 211–218. <https://doi.org/10.1089/109493100316067>.
- Griffiths, M. D. (2018). Is the buying of loot boxes in video games a form of gambling or gaming? *Gaming Law Review*, 22(1), 52–54. <https://doi.org/10.1089/glr.2018.2216>.
- Griffiths, M. D., Kuss, D. J., Lopez-Fernandez, O., & Pontes, H. M. (2017). Problematic gaming exists and is an example of disordered gaming. *Journal of Behavioral Addictions*, 6(3), 296–301. <https://doi.org/10.1556/2006.6.2017.037>.
- Griffiths, M. D., & Parke, J. (2010). Adolescent gambling on the internet: A review. *International Journal of Adolescent Medicine and Health*, 22(1), 59–75.
- Ily, D., & Florack, J. (2018). *Ratgeber Videospiel- und Internetabhängigkeit: Hilfe für den Alltag* (1. Auflage). München, Germany: Elsevier. Retrieved from <http://www.sciencedirect.com/science/book/9783437229916>
- Israelashvili, M., Kim, T., & Bukobza, G. (2012). Adolescents’ over-use of the cyber world--Internet addiction or identity exploration? *Journal of Adolescence*, 35(2), 417–424. <https://doi.org/10.1016/j.adolescence.2011.07.015>.
- James, R. J. E., & Tunney, R. J. (2017). The relationship between gaming disorder and addiction requires a behavioral analysis. *Journal of Behavioral Addictions*, 6(3), 306–309. <https://doi.org/10.1556/2006.6.2017.045>.
- Kardefelt-Winther, D. (2015). Assessing the diagnostic contribution of internet gaming disorder criteria requires improved content, construct and face validity-a response to Rehbein and colleagues (2015). *Addiction (Abingdon, England)*, 110(8), 1359–1360. <https://doi.org/10.1111/add.12987>.
- King, D. L., Delfabbro, P. H., Griffiths, M. D., & Gradisar, M. (2011). Assessing clinical trials of internet addiction treatment: A systematic review and CONSORT evaluation. *Clinical Psychology Review*, 31(7), 1110–1116. <https://doi.org/10.1016/j.cpr.2011.06.009>.
- King, D. L., Haagsma, M. C., Delfabbro, P. H., Gradisar, M., & Griffiths, M. D. (2013). Toward a consensus definition of pathological video-gaming: A systematic review of psychometric assessment tools. *Clinical Psychology Review*, 33(3), 331–342. <https://doi.org/10.1016/j.cpr.2013.01.002>.
- King, D. L., Herd, M. C. E., & Delfabbro, P. H. (2018). Motivational components of tolerance in Internet gaming disorder. *Computers in Human Behavior*, 78, 133–141. <https://doi.org/10.1016/j.chb.2017.09.023>.

- Király, O., & Demetrovics, Z. (2017). Inclusion of gaming disorder in ICD has more advantages than disadvantages. *Journal of Behavioral Addictions*, 6(3), 280–284. <https://doi.org/10.1556/2006.6.2017.046>.
- Király, O., Griffiths, M. D., & Demetrovics, Z. (2015). Internet gaming disorder and the DSM-5: Conceptualization, debates, and controversies. *Current Addiction Reports*, 2(3), 254–262. <https://doi.org/10.1007/s40429-015-0066-7>.
- Király, O., Slezcka, P., Pontes, H. M., Urbán, R., Griffiths, M. D., & Demetrovics, Z. (2017). Validation of the Ten-Item Internet Gaming Disorder Test (IGDT-10) and evaluation of the nine DSM-5 Internet Gaming Disorder criteria. *Addictive Behaviors*, 64, 253–260. <https://doi.org/10.1016/j.addbeh.2015.11.005>.
- Ko, C. H., Yen, J. Y., Chen, S. H., Wang, P. W., Chen, C. S., & Yen, C. F. (2014). Evaluation of the diagnostic criteria of Internet gaming disorder in the DSM-5 among young adults in Taiwan. *Journal of Psychiatric Research*, 53, 103–110. <https://doi.org/10.1016/j.jpsychires.2014.02.008>.
- Koo, H. J., Han, D. H., Park, S. Y., & Kwon, J. H. (2017). The structured clinical interview for DSM-5 internet gaming disorder: Development and validation for diagnosing IGD in adolescents. *Psychiatry Investigation*, 14(1), 21–29. <https://doi.org/10.4306/pi.2017.14.1.21>.
- Kuss, D., & Griffiths, M. (2012). Internet and gaming addiction: A systematic literature review of neuroimaging studies. *Brain Sciences*, 2(3), 347–374.
- Laconi, S., Rodgers, R. F., & Chabrol, H. (2014). The measurement of Internet addiction: A critical review of existing scales and their psychometric properties. *Computers in Human Behavior*, 41, 190–202. <https://doi.org/10.1016/j.chb.2014.09.026>.
- Lee, S. Y., Choo, H., & Lee, H. K. (2017). Balancing between prejudice and fact for gaming disorder: Does the existence of alcohol use disorder stigmatize healthy drinkers or impede scientific research? *Journal of Behavioral Addictions*, 6(3), 302–305. <https://doi.org/10.1556/2006.6.2017.047>.
- Lehenbauer-Baum, M., & Fohringer, M. (2015). Towards classification criteria for Internet gaming disorder: Debunking differences between addiction and high engagement in a German sample of World of Warcraft players. *Computers in Human Behavior*, 45, 345–351. <https://doi.org/10.1016/j.chb.2014.11.098>.
- Lehenbauer-Baum, M., Klaps, A., Kovacovsky, Z., Witzmann, K., Zahlbruckner, R., & Stetina, B. U. (2015). Addiction and engagement: An explorative study toward classification criteria for internet gaming disorder. *Cyberpsychology, Behavior and Social Networking*, 18(6), 343–349.
- Leménager, T., Dieter, J., Hill, H., Koopmann, A., Reinhard, I., Sell, M., et al. (2014). Neurobiological correlates of physical self-concept and self-identification with avatars in addicted players of massively multiplayer online role-playing games (MMORPGs). *Addictive Behaviors*, 39(12), 1789–1797. <https://doi.org/10.1016/j.addbeh.2014.07.017>.
- Lemmens, J. S., Valkenburg, P. M., & Gentile, D. A. (2015). The Internet Gaming Disorder Scale. *Psychological Assessment*, 27(2), 567–582. <https://doi.org/10.1037/pas0000062>.
- Lortie, C. L., & Guitton, M. J. (2013). Internet addiction assessment tools: Dimensional structure and methodological status. *Addiction (Abingdon, England)*, 108(7), 1207–1216. <https://doi.org/10.1111/add.12202>.
- Luciano, M. (2015). The ICD-11 beta draft is available online. *World Psychiatry*, 14(3), 375–376. <https://doi.org/10.1002/wps.20262>.
- Meerkerk, G. J., van den Eijnden, R. J. J. M., Vermulst, A. A., & Garretsen, H. F. L. (2009). The compulsive internet use scale (CIUS): Some psychometric properties. *Cyberpsychology & Behavior*, 12(1), 1–6.
- Müller, A., Mitchell, J. E., Crosby, R. D., Cao, L., Johnson, J., Claes, L., & de Zwaan, M. (2012). Mood states preceding and following compulsive buying episodes: An ecological momentary assessment study. *Psychiatry Research*, 200(2–3), 575–580. <https://doi.org/10.1016/j.psychres.2012.04.015>.
- Müller, K. (2017). *Internetsucht: Wie man sie erkennt und was man dagegen tun kann. Essentials*. Wiesbaden, Germany: Springer Spektrum.

- Müller, K., & Wölfling, K. (2017). *Pathologischer Mediengebrauch und Internetsucht (1. Auflage). Sucht Track 2*. Stuttgart, Germany: Verlag W. Kohlhammer.
- Musetti, A., Cattivelli, R., Giacobbi, M., Zuglian, P., Ceccarini, M., Capelli, F., et al. (2016). Challenges in Internet addiction disorder: Is a diagnosis feasible or not? *Frontiers in Psychology*, 7, 842.
- Musetti, A., & Corsano, P. (2018). The internet is not a tool: Reappraising the model for internet-addiction disorder based on the constraints and opportunities of the digital environment. *Frontiers in Psychology*, 9, 558. <https://doi.org/10.3389/fpsyg.2018.00558>.
- Pawlikowski, M., Altstötter-Gleich, C., & Brand, M. (2013). Validation and psychometric properties of a short version of Young's Internet Addiction Test. *Computers in Human Behavior*, 29(3), 1212–1223. <https://doi.org/10.1016/j.chb.2012.10.014>.
- Petry, N. M., Rehbein, F., Gentile, D. A., Lemmens, J. S., Rumpf, H. J., Möble, T., et al. (2014). An international consensus for assessing internet gaming disorder using the new DSM-5 approach. *Addiction*, 109(9), 1399–1406. <https://doi.org/10.1111/add.12457>.
- Pontes, H. M., & Griffiths, M. D. (2017). The development and psychometric evaluation of the Internet Disorder Scale (IDS-15). *Addictive Behaviors*, 64, 261–268. <https://doi.org/10.1016/j.addbeh.2015.09.003>.
- Rehbein, F., Baier, D., Kleimann, M., & Möble, T. (2015). *Computerspielabhängigkeitsskala*. Göttingen: Hogrefe.
- Rehbein, F., Kliem, S., Baier, D., Möble, T., & Petry, N. M. (2015). Prevalence of internet gaming disorder in German adolescents: Diagnostic contribution of the nine DSM-5 criteria in a state-wide representative sample. *Addiction*, 110(5), 842–851. <https://doi.org/10.1111/add.12849>.
- Rehbein, F., & Möble, T. (2013). Video game and internet addiction: Is there a need for differentiation? *Sucht: Zeitschrift für Wissenschaft und Praxis*, 59(3), 129–142.
- Robinson, T. E., & Berridge, K. C. (2003). Addiction. *Annual Review of Psychology*, 54, 25–53. <https://doi.org/10.1146/annurev.psych.54.101601.145237>.
- Rose, S., & Dhandayudham, A. (2014). Towards an understanding of internet-based problem shopping behaviour: The concept of online shopping addiction and its proposed predictors. *Journal of Behavioral Addictions*, 3(2), 83–89. <https://doi.org/10.1556/JBA.3.2014.003>.
- Saunders, J. B., Hao, W., Long, J., King, D. L., Mann, K., Fauth-Bühler, M., et al. (2017). Gaming disorder: Its delineation as an important condition for diagnosis, management, and prevention. *Journal of Behavioral Addictions*, 6(3), 271–279. <https://doi.org/10.1556/2006.6.2017.039>.
- Shadloo, B., Farnam, R., Amin-Esmaili, M., Hamzehzadeh, M., Rafiemanesh, H., Jobehdar, M. M., et al. (2017). Inclusion of gaming disorder in the diagnostic classifications and promotion of public health response. *Journal of Behavioral Addictions*, 6(3), 310–312. <https://doi.org/10.1556/2006.6.2017.048>.
- Shapira, N. A., Goldsmith, T., Keck, P., Khosla, U., & McElroy, S. (2000). Psychiatric features of individuals with problematic internet use. *Journal of Affective Disorders*, 57(1–3), 267–272.
- Shapira, N. A., Lessig, M. C., Goldsmith, T. D., Szabo, S. T., Lazoritz, M., Gold, M. S., & Stein, D. J. (2003). Problematic internet use: Proposed classification and diagnostic criteria. *Depression and Anxiety*, 17(4), 207–216. <https://doi.org/10.1002/da.10094>.
- Starcevic, V., & Aboujaoude, E. (2017). Internet addiction: Reappraisal of an increasingly inadequate concept. *CNS Spectrums*, 22(1), 7–13. <https://doi.org/10.1017/S1092852915000863>.
- Van den Brink, W. (2017). Icd-11 gaming disorder: Needed and just in time or dangerous and much too early? *Journal of Behavioral Addictions*, 6(3), 290–292. <https://doi.org/10.1556/2006.6.2017.040>.
- Van Rooij, A. J., Schoenmakers, T. M., van den Eijnden, R. J. J. M., Vermulst, A. A., & van de Mheen, D. (2012). Video game addiction test: Validity and psychometric characteristics. *Cyberpsychology, Behavior and Social Networking*, 15(9), 507–511. <https://doi.org/10.1089/cyber.2012.0007>.
- Widyanto, L., & McMurran, M. (2004). The psychometric properties of the internet addiction test. *Cyberpsychology & Behavior*, 7(4), 443–450. <https://doi.org/10.1089/cpb.2004.7.443>.

- Wilens, T. E. (2004). Impact of ADHD and its treatment on substance abuse in adults. *The Journal of Clinical Psychiatry*, 65(Suppl 3), 38–45.
- Wölfling, K., Müller, K., & Beutel, M. (2010). Diagnostische Testverfahren: Skala zum Onlinesuchtverhalten bei Erwachsenen (OSVs-S). In D. Mücken (Ed.), *Prävention, Diagnostik und Therapie von Computerspielabhängigkeit* (pp. 212–215). Lengerich, Germany: Pabst Science Publishers.
- World Health Organization. (2018). *International classification of diseases: ICD-11 for mortality and morbidity statistics*. Retrieved from <https://icd.who.int/browse11/l-m/en>
- Young, K. S. (1998a). *Caught in the net: How to recognize the signs of internet addiction--and a winning strategy for recovery*. New York, NY: Wiley.
- Young, K. S. (1998b). Internet addiction: The emergence of a new clinical disorder. *Cyberpsychology & Behavior*, 1(3), 237–244. <https://doi.org/10.1089/cpb.1998.1.237>.

Chapter 2

Characteristics and Conditions Associated with Internet Use Disorders



2.1 Prevalence Estimates of Internet Use Disorders

Internet use disorders (IUD) is an increasing health problem, especially among adolescents and young adults around the world. Reported prevalence rates vary vastly and range from 0.7% among adults in the USA (Aboujaoude, Koran, Gamel, Large, & Serpe, 2006) to 26.7% among adolescents in China (Shek & Yu, 2012). A meta-analysis on Internet use disorders prevalence in 31 nations (89,281 participants) revealed a global prevalence estimate of 6.0%, with the highest rates in the Middle East and the lowest rates in Northern and Western Europe (Cheng & Li, 2014). Prevalence rates of Internet gaming disorder, the subtype of Internet use disorders which is already included in ICD-11 (World Health Organization, 2018) and DSM-5 (American Psychiatric Association, 2013) range from 0.6% among adolescents and adults in Norway (Mentzoni et al., 2011) to 21.5% among adolescents in China (Xu & Yuan, 2008). A meta-analysis including studies of the last three decades reported a global Internet gaming disorder prevalence rate of 4.6% among adolescents (Fam, 2018). Different assessment tools, cut-offs, and survey methods (e.g., online, by telephone, and at school) may account for the heterogeneous findings. For instance, online surveys showed the highest prevalence rates (Mihara & Higuchi, 2017).

The numbers indicate that Internet use disorder is a significant problem, especially among adolescent populations. This highlights the need to develop effective prevention and treatment approaches.

2.2 Associated Symptoms of Internet Use Disorders

The emergence of Internet use disorder has often been associated with other social, academic, and mental health problems as well as with a rash of comorbid mental disorders. Knowledge about risk factors that precede Internet use disorders is vital

for several reasons: First, it serves as an indicator for the selection of target groups for intervention programs. Those with an increased risk are likely to benefit most from prevention (indicated prevention; Junge-Hoffmeister, 2009). Second, it allows for a modification of risk factors within the scope of intervention programs (e.g., promoting emotion regulation skills or reducing social anxiety).

Aiming to understand the underlying processes concerning the development and maintenance of Internet use disorders, studies have investigated various potentially relevant factors. As a consequence, many questions about the direction of causality have arisen: Are Internet use disorders symptoms of other mental illnesses or do they stand alone as independent disorders with high comorbidity rates? Assuming that Internet use disorders are independent mental disorders, as acknowledged by the WHO, are other mental health problems causes or consequences of Internet use disorders? Or is there a reciprocal relationship? The growing body of empirical research has contributed to a better understanding of the context of Internet use disorders; however, many questions remain open to date. One central problem involves methodological inconsistencies due to the lack of a uniform definition in the past years before the publication of the DSM-5 research criteria for Internet gaming disorder. Furthermore, most of the findings are correlational and therefore do not allow for conclusions on causality. Longitudinal research on this issue is rare but indispensable to shed light on the involved factors, e.g., in order to identify risk and protective factors as well as consequences of Internet use disorders. Concerning these, several reviews summarized the findings of cross-sectional and longitudinal studies of the past two decades (Anderson, Steen, & Stavropoulos, 2016; Carli et al., 2013; Ho et al., 2014; Ko, Yen, Yen, Chen, & Chen, 2012; Mihara & Higuchi, 2017) which are discussed in the following.

2.2.1 Individual Characteristics

The literature on individual factors associated with Internet use disorders has taken several sociodemographic, academic, personality, and mental health-based variables into account. With regard to gender effects on Internet use disorders, most studies demonstrated that male gender is a risk factor of Internet use disorders, especially for Internet gaming disorder (Haagsma, Pieterse, & Peters, 2012; Király et al., 2014; Mentzoni et al., 2011; Wittek et al., 2016). However, some studies report equally distributed prevalence rates across gender regarding Internet use disorders (Jackson et al., 2003; Lindenberg, Halasy, Szász-Janocha, & Wartberg, 2018; Rumpf et al., 2014). Other researchers emphasize the need for more differentiation: They report a male predominance in Internet gaming disorder and a female predominance in Internet use disorders (Rehbein & Mößle, 2013; Strittmatter et al., 2015).

Studies show heterogeneous results concerning age effects on Internet use disorders. Cross-sectional studies investigating both adolescent and adult samples demonstrated higher prevalence rates in younger age groups (Bakken, Wenzel, Götestam, Johansson, & Oren, 2009; Lemmens, Valkenburg, & Gentile, 2015; Mentzoni et al., 2011; Wittek et al., 2016). However, studies focusing on adolescents only reported

increasing prevalence rates during adolescence and early adulthood: A large-scale high-school study from Germany investigating Internet use disorders prevalence rates in different age groups of 11–21-year-old students demonstrated an increasing prevalence with two peaks (Lindenberg et al., 2018). The peaks were found at ages 15–16 years and 19–21 years. In line with these findings, another study exploring Internet use disorder differences at ages 11–18 in a European sample showed a positive correlation between age and Internet use disorders with the highest risk among adolescents aged 15–16 years (Karacic & Oreskovic, 2017). The subsequent decrease in Internet use disorders symptoms between 16 and 18 years has been confirmed in a longitudinal study from Greece (Stavropoulos et al., 2018). Possible explanations for the increasing risk of developing Internet use disorders during adolescence include the increasing detachment from parents at this age and consequently a decreasing control behavior by parents (Karacic & Oreskovic, 2017) as well as a natural decrease in craving symptoms and an increase in internal control strategies with higher age (Stavropoulos et al., 2018). The renewed rise of prevalence and second peak in young adulthood (19–21 years) in the German study may be caused by radical changes in the adolescents' life at this age (e.g., making decisions about the future career, leaving the parental home) and could be provoked by an elevated stress level due to increased demands. Nevertheless, the underlying processes and influencing factors have not been assessed yet. Further research, especially longitudinal study designs, is needed to enlighten the directional and casual effects of age on Internet use disorders.

As academic performance in adolescence (school grades) and young adulthood (vocational training or academic studies) paves the way for a future career, various impairing factors are particularly critical during these stages of development. Previous research has shown a clear association between Internet use disorders and lower academic achievement (Brunborg, Mentzoni, & Frøyland, 2014; Choo et al., 2010; Gentile, 2009; Gentile et al., 2011; Haghbin, Shaterian, Hosseinzadeh, & Griffiths, 2013; Huang et al., 2009; Müller et al., 2015; Rehbein, Kleimann, & Mößle, 2010; Rehbein, Kliem, Baier, Mößle, & Petry, 2015; Stavropoulos, Alexandraki, & Motti-Stefanidi, 2013; Tsitsika et al., 2011; Wang et al., 2014) and increased truancy (Austin & Totaro, 2011; Rehbein et al., 2010; Rehbein et al., 2015; Tsitsika et al., 2011). Furthermore, a low academic self-concept seems to act as a risk factor for Internet gaming disorder (Mößle & Rehbein, 2013). Still, the role of educational level in Internet use disorders is not clear. Some studies suggested lower levels of education in affected individuals (Kuss, van Rooij, Shorter, Griffiths, & van de Mheen, 2013; Rehbein et al., 2015) and some studies suggested higher levels of education in individuals suffering from Internet use disorders (Bakken et al., 2009; Stavropoulos et al., 2013), while other studies showed no significant difference (Rehbein et al., 2010; Wittek et al., 2016). In adult addicted gamers, more financial and professional difficulties were found compared to non-addicted gamers (Achab et al., 2011).

Furthermore, Internet use disorder is associated with elevated levels of psychopathology and poor mental health. Given the correlational design of most of the studies, conclusions on causality cannot be made. Thus, it is not clear if other mental disorders are risk factors for developing Internet use disorders or vice versa. On the one hand, associations between Internet use disorders and internalizing disorders have

been found, e.g., for depression (Bargeron & Hormes, 2017; Brunborg et al., 2014; Kim et al., 2016; King, Delfabbro, Zwaans, & Kaptis, 2013; Király et al., 2014; Männikkö, Billieux, & Kääriäinen, 2015; Mentzoni et al., 2011; Ostovar et al., 2016; Strittmatter et al., 2015), anxiety (Bargeron & Hormes, 2017; Kim et al., 2016; King et al., 2013; Männikkö et al., 2015; Mentzoni et al., 2011; Ostovar et al., 2016), panic disorder (King et al., 2013), somatization (Kim et al., 2016), obsessive-compulsive disorder (Kim et al., 2016), and sleep disorders (Männikkö et al., 2015; Rehbein et al., 2015). On the other hand, elevated levels of externalizing behavior and disorders have been reported, e.g., aggression (Festl, Scharkow, & Quandt, 2013; Lemmens, Valkenburg, & Peter, 2009; Müller et al., 2015), hostility (Kim et al., 2016), conduct disorders (Strittmatter et al., 2015), substance and alcohol abuse (Bakken et al., 2009) as well as hyperactivity/inattention (Strittmatter et al., 2015). A systematic review on Internet use disorders and comorbid psychopathology found depression to be the most relevant factor (Carli et al., 2013), while a meta-analysis investigating the association between Internet use disorders and other psychiatric disorders concluded that alcohol abuse had the strongest association with Internet use disorders (Ho et al., 2014). Moreover, individuals with Internet use disorders show more self-harming and suicidal behavior (Strittmatter et al., 2015), decreased levels of life satisfaction (Bargeron & Hormes, 2017; Festl et al., 2013; Lemmens et al., 2009; Mentzoni et al., 2011), and elevated levels of stress (Bargeron & Hormes, 2017; Ostovar et al., 2016). Besides, studies have demonstrated a negative correlation between Internet gaming disorder and various personality factors such as conscientiousness (Wittek et al., 2016), self-efficacy (Festl et al., 2013), and sociability (Festl et al., 2013) as well as a positive association between Internet gaming disorder and neuroticism (Wittek et al., 2016), self-esteem problems (Hyun et al., 2015; Wartberg et al., 2017), and impulsivity (Bargeron & Hormes, 2017; Hyun et al., 2015). Furthermore, diverse skills like social competences and adaptive emotion regulation seem to play a crucial role. Individuals suffering from Internet use disorders report lower social competences (Festl et al., 2013; Lemmens et al., 2009; Rehbein et al., 2010), higher levels of emotional distress (Wartberg et al., 2017), and more dysfunctional emotion regulation (Gentile et al., 2011). A 2-year prospective study including 2293 Taiwanese adolescents identified depression, attention-deficit/hyperactivity disorder (ADHD), social phobia, and hostility as risk factors for the development of Internet use disorders 2 years later (Ko, Yen, Chen, Yeh, & Yen, 2009). The authors explained the link to ADHD with biopsychosocial factors in affected adolescents: The application-based characteristics (e.g., stimulation, contingency of rewards) compensate typical vulnerabilities in adolescents with ADHD. A longitudinal study found that higher levels of impulsivity, a key symptom of ADHD, predicted Internet gaming disorder 2 years later (Gentile et al., 2011). Another longitudinal trial in South Korea found anxiety and depression to be risk factors (Cho, Sung, Shin, Lim, & Shin, 2013). The authors reported that withdrawal, anxiety, and depression at age eight predicted Internet use disorders in adolescence. This was attributed to several functions and characteristics of the Internet as it is an easily accessible tool for stress relief. Given that depressed, anxious, and isolated individuals typically show avoidant behavior (e.g., avoiding socializing or potentially risky leisure activities), it is not surprising that affected individuals use the Internet as a valve. In line with this

approach, deficient social competences (Gentile et al., 2011; Lemmens, Valkenburg, & Peter, 2011a) and lower levels of self-esteem (Chang, Chiu, Lee, Chen, & Miao, 2014; Gentile et al., 2011) were revealed as risk factors for the development of Internet use disorders. Loneliness seemed to play a bi-directional role as cause and as outcome (Lemmens et al., 2011a). A 2-year longitudinal study including more than 3000 Singaporean children indicated that Internet use disorder is not only the effect of other mental disorders, but that it also promotes their development (Gentile et al., 2011). The authors concluded that depression, anxiety, and social phobias acted as outcomes of Internet gaming disorder. Furthermore, Lemmens, Valkenburg, and Peter (2011b) showed that Internet gaming disorder provoked elevated levels in physical aggression in males (regardless of violent content in the games). Taken together, the current state of research indicates a reciprocal relationship between Internet use disorders and other mental disorders (Anderson et al., 2016).

2.2.2 Contextual and Environmental Factors

Contextual factors determine the environment in which we live and grow up. These factors are not easy to modify since we are born into a family with distinctive characteristics (e.g., small vs. large or wealthy vs. poor), into a specific country with a specific culture (e.g., individualistic vs. collectivistic), and with specific social and community norms. Research indicates that such contextual factors may also have effects on the development of Internet use disorders.

As presented above, studies from different countries revealed different prevalence rates. According to a meta-analysis on Internet use disorders prevalence (Cheng & Li, 2014), the highest rate (10.9%) was found in the Middle East (including studies from Iran, Israel, Lebanon, and Turkey). The second highest rate (8.0%) was reported for the USA, followed by Asia with an average rate of 7.1% (including studies from China, Hong Kong, India, South Korea, and Taiwan). Studies from Southern and Eastern Europe (including studies from Bulgaria, Cyprus, Czech Republic, Greece, Hungary, Italy, Poland, Romania, Serbia, Slovenia, and Spain) found an average prevalence rate of 6.1%, studies from Australia a prevalence of 4.3%, and studies from Northern and Western Europe a prevalence of 2.6% (including studies from Austria, Estonia, France, Germany, Ireland, Norway, Sweden, and United Kingdom). A further result of the meta-analysis was a negative association between Internet use disorders prevalence and quality of life. Higher prevalence rates were reported in regions with lower levels of life satisfaction and lower quality of environmental conditions (e.g., higher amount of air pollution, lower income). The authors suggested that these burdens go along with elevated levels of stress that may lead to excessive Internet use as an emotion regulation strategy. A meta-analysis on Internet gaming disorder prevalence among adolescents (Fam, 2018) found the highest rate of 9.9% in Asia, followed by North America with 9.4%, Australia with 4.4%, and Europe with 3.9%. The authors traced the high prevalence rates in Asian countries back to their development of the most popular games. In contrast, Mihara & Higuchi (2017) stated in their systematic review that the increased

prevalence in Asia has to be interpreted with caution due to methodological discrepancies and stricter diagnostic criteria in non-Asian countries as well as a non-representative origin of the Asian studies (2017).

Family-related variables have a vital effect on our psychosocial development due to the closeness and inevitableness during childhood. As previous research shows, several family factors are linked to Internet use disorders. A negative correlation between Internet gaming disorder and the quality of the parent–child relationship has been consistently reported (e.g., Charlie, Hye Kyung, & Khoo, 2011; Kwon, Chung, & Lee, 2011). Furthermore, a subjective family disharmony or poor family functioning is associated with Internet gaming disorder (Rikkers, Lawrence, Hafekost, & Zubrick, 2016; Wang et al., 2014). However, the role of parental supervision and restrictions concerning the adolescents' gaming behavior is still not clear. While one study showed a beneficial effect of supervision on adolescents gaming behavior (Rehbein & Baier, 2013), other studies showed no significant impact (Choo, Sim, Liau, Gentile, & Khoo, 2015; Liau et al., 2015). In longitudinal studies, a higher parent–child closeness (Choo et al., 2015; Liau et al., 2015) as well as a warm family environment (Liau et al., 2015) showed a protective effect on the development of Internet gaming disorder. Given that excessive gaming and Internet use often provoke conflicts with family members (e.g., because excessive users may neglect their duties), a vicious circle may arise. Therefore, interventions should not only address the adolescent suffering from Internet use disorders but also involve the family system (Schneider, King, & Delfabbro, 2017). Adolescents with Internet gaming disorder reported a parental divorce significantly more often (Müller et al., 2015). A 5-year longitudinal study confirmed growing up in a single-parent family as a risk factor (Rehbein & Baier, 2013). With respect to socioeconomic status, the majority of the studies found no significant association (Schneider et al., 2017). In conclusion, a dysfunctional family background seems to contribute to the development of Internet gaming disorder.

Detachment from parents becomes more and more important with increasing age, especially during adolescence. Accordingly, adolescents spend more and more time outside of the parental home investigating in relationships beyond the family. Thus, social relations to peers gain increasing influence. As mentioned above, poor social skills are associated with elevated levels of Internet use disorders and may consequently go along with peer problems. Although research on peer and school-related factors is scarce, studies reported a link between Internet use disorders and peer problems (Chen, Chen, & Gau, 2015; Möble & Rehbein, 2013; Strittmatter et al., 2015) as well as poor social integration (Festl et al., 2013). Affected individuals had a smaller number of friends and social contacts, reported poorer emotional support, and were exposed to or involved in bullying more frequently (Rasmussen et al., 2015). Longitudinal studies revealed that social integration into the class (Rehbein & Baier, 2013), subjective well-being at school (Rehbein & Baier, 2013), and higher levels of school bonding (Chang et al., 2014) are protective factors against Internet gaming disorder. These findings are in line with theories that suggest a compensatory role of the Internet and video games regarding social relations. In fact, digital contacts do not replace real friends, but they give a sense of belonging to a social group and apparently compensate feelings of loneliness and isolation.

2.2.3 Application-Related Factors

Due to the progress of digitalization in the last few decades, the Internet has become a normal part of daily life almost all over the world. Since the Internet and the gaming industry offer a seemingly endless range of media activities appealing to every taste, there is an intuitive assumption that Internet penetration promotes excessive Internet use. However, a meta-analysis of 31 nations by Cheng and Li (2014) could not support this accessibility hypothesis, as prevalence rates of Internet use disorders were independent of Internet penetration rates. Previous research suggested that some applications are more addictive than others, especially when focusing on gaming-related characteristics: There are various genres of games, ranging from action games, role-playing games, strategy games, sports games, and many more. Additionally, the distinction between online and offline games is crucial. Studies revealed that users of online games seem to be more affected by symptoms of Internet gaming disorder than offline games users (Festl et al., 2013; Haagsma et al., 2012). Role-playing and shooter game users as well as users of massively multi-player online role-playing games (MMORPGs) were found to have a higher risk for Internet gaming disorder (Rehbein et al., 2010). MMORPGs include role-playing and shooter game elements and are characterized by a virtual world, which is constantly being changed by the avatars of a large number of participating players (e.g., World of Warcraft). Longitudinal studies identified longer hours of playing video games (Gentile et al., 2011), especially online games (Rosenkranz, Müller, Dreier, Beutel, & Wölfling, 2017; Van Rooij, Schoenmakers, van de Eijnden, & van de Mheen, 2010) as risk factors for an addictive use. A longitudinal representative study from Germany investigating the addictive potential of different Internet applications revealed online gaming as the most addictive application (Rosenkranz et al., 2017). Taking gender into account, chatting as well as social networking had the highest addictive potential in girls, while gaming had the highest addictive potential in boys.

Another critical factor is the amount of time spent on playing games and being online. The amount of time spent on playing games (Achab et al., 2011; Choo et al., 2010; Coëffec et al., 2015; Festl et al., 2013; Gentile, 2009; Grüsser, Thalemann, & Griffiths, 2007; Haagsma et al., 2012; Hussain, Griffiths, & Baguley 2011; Kim et al., 2016; Lopez-Fernandez, Honrubia-Serrano, Baguley, & Griffiths, 2014; Männikkö et al., 2015; Pontes, Király, Demetrovics, & Griffiths, 2014; Rehbein et al., 2015; Wang et al., 2014) as well as the frequency of gaming (Gentile 2009; Haagsma et al., 2012; Lopez-Fernandez et al., 2014) is positively correlated with Internet gaming disorder. Moreover, the number of years spent on playing video games is positively associated with Internet gaming disorder (Gentile, 2009). Nevertheless, the amount of time spent online or on playing games seems to be a marker of pathological use but it is not a crucial criterion for Internet use disorders. Consequently, a critical time limit for distinguishing between functional and dysfunctional cannot be defined.

2.3 Conclusion

In summary, existing research on associated variables of Internet use disorders illustrates a complex interplay of multiple risk factors, consequences, and reciprocal processes. Aiming to provide effective and efficient prevention and intervention, the understanding of contributing factors is essential and must be taken into account.

References

- Aboujaoude, E., Koran, L. M., Gamel, N., Large, M. D., & Serpe, R. T. (2006). Potential markers for problematic internet use: A telephone survey of 2,513 adults. *CNS Spectrums*, 11(10), 750–755.
- Achab, S., Nicolier, M., Mauny, F., Monnin, J., Trojak, B., Vandel, P., et al. (2011). Massively multiplayer online role-playing games: Comparing characteristics of addict vs non-addict online recruited gamers in a French adult population. *BMC Psychiatry*, 11, 144. <https://doi.org/10.1186/1471-244X-11-144>.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders, Fifth Edition (DSM-5)*. Arlington, TX: American Psychiatric Publishing.
- Anderson, E. L., Steen, E., & Stavropoulos, V. (2016). Internet use and problematic internet use: A systematic review of longitudinal research trends in adolescence and emergent adulthood. *International Journal of Adolescence and Youth*, 22(4), 430–454. <https://doi.org/10.1080/02673843.2016.1227716>.
- Austin, W. A., & Totaro, M. W. (2011). Gender differences in the effects of Internet usage on high school absenteeism. *The Journal of Socio-Economics*, 40(2), 192–198. <https://doi.org/10.1016/j.socrec.2010.12.017>.
- Bakken, I. J., Wenzel, H. G., Götestam, K. G., Johansson, A., & Oren, A. (2009). Internet addiction among Norwegian adults: A stratified probability sample study. *Scandinavian Journal of Psychology*, 50(2), 121–127. <https://doi.org/10.1111/j.1467-9450.2008.00685.x>.
- Bargeron, A. H., & Holmes, J. M. (2017). Psychosocial correlates of internet gaming disorder: Psychopathology, life satisfaction, and impulsivity. *Computers in Human Behavior*, 68, 388–394. <https://doi.org/10.1016/j.chb.2016.11.029>.
- Brunborg, G. S., Mentzoni, R. A., & Frøyland, L. R. (2014). Is video gaming, or video game addiction, associated with depression, academic achievement, heavy episodic drinking, or conduct problems? *Journal of Behavioral Addictions*, 3(1), 27–32. <https://doi.org/10.1556/JBA.3.2014.002>.
- Carli, V., Durkee, T., Wasserman, D., Hadlaczky, G., Despalins, R., Kramarz, E., et al. (2013). The association between pathological internet use and comorbid psychopathology: A systematic review. *Psychopathology*, 46(1), 1–13. <https://doi.org/10.1159/000337971>.
- Chang, F.-C., Chiu, C.-H., Lee, C.-M., Chen, P.-H., & Miao, N.-F. (2014). Predictors of the initiation and persistence of internet addiction among adolescents in Taiwan. *Addictive Behaviors*, 39(10), 1434–1440. <https://doi.org/10.1016/j.addbeh.2014.05.010>.
- Charlie, C. W. D., Hye Kyung, C., & Khoo, A. (2011). Role of parental relationships in pathological gaming. *Procedia - Social and Behavioral Sciences*, 30, 1230–1236. <https://doi.org/10.1016/j.sbspro.2011.10.238>.
- Chen, Y.-L., Chen, S.-H., & Gau, S. S.-F. (2015). ADHD and autistic traits, family function, parenting style, and social adjustment for Internet addiction among children and adolescents in Taiwan: A longitudinal study. *Research in Developmental Disabilities*, 39, 20–31. <https://doi.org/10.1016/j.ridd.2014.12.025>.

- Cheng, C., & Li, A. Y. L. (2014). Internet addiction prevalence and quality of (real) life: A meta-analysis of 31 nations across seven world regions. *Cyberpsychology, Behavior and Social Networking*, 17(12), 755–760. <https://doi.org/10.1089/cyber.2014.0317>.
- Cho, S.-M., Sung, M.-J., Shin, K.-M., Lim, K. Y., & Shin, Y.-M. (2013). Does psychopathology in childhood predict internet addiction in male adolescents? *Child Psychiatry and Human Development*, 44(4), 549–555. <https://doi.org/10.1007/s10578-012-0348-4>.
- Choo, H., Gentile, D. A., Sim, T., Li, D., Khoo, A., & Liao, A. K. (2010). Pathological video-gaming among Singaporean youth. *Annals of the Academy of Medicine, Singapore*, 39(11), 822–829.
- Choo, H., Sim, T., Liao, A. K. F., Gentile, D. A., & Khoo, A. (2015). Parental influences on pathological symptoms of video-gaming among children and adolescents: A prospective study. *Journal of Child and Family Studies*, 24(5), 1429–1441. <https://doi.org/10.1007/s10826-014-9949-9>.
- Coëffec, A., Romo, L., Cheze, N., Riazuelo, H., Plantey, S., Kotbagi, G., & Kern, L. (2015). Early substance consumption and problematic use of video games in adolescence. *Frontiers in Psychology*, 6, 501. <https://doi.org/10.3389/fpsyg.2015.00501>.
- Fam, J. Y. (2018). Prevalence of internet gaming disorder in adolescents: A meta-analysis across three decades. *Scandinavian Journal of Psychology*, 59(5), 524–531. <https://doi.org/10.1111/sjop.12459>.
- Festl, R., Scharkow, M., & Quandt, T. (2013). Problematic computer game use among adolescents, younger and older adults. *Addiction*, 108(3), 592–599. <https://doi.org/10.1111/add.12016>.
- Gentile, D. (2009). Pathological video-game use among youth ages 8 to 18: A national study. *Psychological Science*, 20(5), 594–602. <https://doi.org/10.1111/j.1467-9280.2009.02340.x>.
- Gentile, D. A., Choo, H., Liao, A., Sim, T., Li, D., Fung, D., & Khoo, A. (2011). Pathological video game use among youths: A two-year longitudinal study. *Pediatrics*, 127(2), e319–e329. <https://doi.org/10.1542/peds.2010-1353>.
- Grüsser, S. M., Thalemann, R., & Griffiths, M. D. (2007). Excessive computer game playing: Evidence for addiction and aggression? *Cyberpsychology & Behavior*, 10(2), 290–292. <https://doi.org/10.1089/cpb.2006.9956>.
- Haagsma, M. C., Pieterse, M. E., & Peters, O. (2012). The prevalence of problematic video gamers in the Netherlands. *Cyberpsychology, Behavior and Social Networking*, 15(3), 162–168. <https://doi.org/10.1089/cyber.2011.0248>.
- Haghighi, M., Shaterian, F., Hosseinzadeh, D., & Griffiths, M. D. (2013). A brief report on the relationship between self-control, video game addiction and academic achievement in normal and ADHD students. *Journal of Behavioral Addictions*, 2(4), 239–243. <https://doi.org/10.1556/JBA.2.2013.4.7>.
- Ho, R. C., Zhang, M. W. B., Tsang, T. Y., Toh, A. H., Pan, F., Lu, Y., et al. (2014). The association between internet addiction and psychiatric co-morbidity: A meta-analysis. *BMC Psychiatry*, 14, 183. <https://doi.org/10.1186/1471-244X-14-183>.
- Huang, R. L., Lu, Z., Liu, J. J., You, Y. M., Pan, Z. Q., Wei, Z., et al. (2009). Features and predictors of problematic internet use in Chinese college students. *Behaviour & Information Technology*, 28(5), 485–490. <https://doi.org/10.1080/01449290701485801>.
- Hussain, Z., Griffiths, M. D., & Baguley, T. (2011). Online gaming addiction: Classification, prediction and associated risk factors. *Addiction Research & Theory*, 20(5), 359–371. <https://doi.org/10.3109/16066359.2011.640442>.
- Hyun, G. J., Han, D. H., Lee, Y. S., Kang, K. D., Yoo, S. K., Chung, U.-S., & Renshaw, P. F. (2015). Risk factors associated with online game addiction: A hierarchical model. *Computers in Human Behavior*, 48, 706–713. <https://doi.org/10.1016/j.chb.2015.02.008>.
- Jackson, L. A., von Eye, A., Biocca, F. A., Barbatsis, G., Fitzgerald, H. E., & Zhao, Y. (2003). Personality, cognitive style, demographic characteristics and Internet use - Findings from the HomeNetToo project. *Swiss Journal of Psychology*, 62(2), 79–90. <https://doi.org/10.1024/1421-0185.62.2.79>.

- Junge-Hoffmeister, J. (2009). Prävention Psychischer Störungen. In S. Schneider & J. Margraf (Eds.), *Lehrbuch der Verhaltenstherapie: Band 3: Störungen im Kindes- und Jugendalter* (pp. 901–922). Heidelberg, Germany: Springer Medizin Verlag.
- Karacic, S., & Oreskovic, S. (2017). Internet addiction through the phase of adolescence: A questionnaire study. *JMIR Mental Health*, 4(2), e11. <https://doi.org/10.2196/mental.5537>.
- Kim, N. R., Hwang, S. S.-H., Choi, J.-S., Kim, D.-J., Demetrovics, Z., Király, O., et al. (2016). Characteristics and psychiatric symptoms of internet gaming disorder among adults using self-reported DSM-5 criteria. *Psychiatry Investigation*, 13(1), 58–66. <https://doi.org/10.4306/pi.2016.13.1.58>.
- King, D. L., Delfabbro, P. H., Zwaans, T., & Kapsis, D. (2013). Clinical features and axis I comorbidity of Australian adolescent pathological internet and video game users. *Australian and New Zealand Journal of Psychiatry*, 47(11), 1058–1067. <https://doi.org/10.1177/0004867413491159>.
- Király, O., Griffiths, M. D., Urbán, R., Farkas, J., Kökönyi, G., Elekes, Z., et al. (2014). Problematic internet use and problematic online gaming are not the same: Findings from a large nationally representative adolescent sample. *Cyberpsychology, Behavior and Social Networking*, 17(12), 749–754. <https://doi.org/10.1089/cyber.2014.0475>.
- Ko, C.-H., Yen, J.-Y., Chen, C.-S., Yeh, Y.-C., & Yen, C.-F. (2009). Predictive values of psychiatric symptoms for internet addiction in adolescents: A 2-year prospective study. *Archives of Pediatrics & Adolescent Medicine*, 163(10), 937–943. <https://doi.org/10.1001/archpediatrics.2009.159>.
- Ko, C. H., Yen, J. Y., Yen, C. F., Chen, C. S., & Chen, C. C. (2012). The association between internet addiction and psychiatric disorder: A review of the literature. *European Psychiatry: The Journal of the Association of European Psychiatrists*, 27(1), 1–8. <https://doi.org/10.1016/j.eurpsy.2010.04.011>.
- Kuss, D. J., van Rooij, A. J., Shorter, G. W., Griffiths, M. D., & van de Mheen, D. (2013). Internet addiction in adolescents: Prevalence and risk factors. *Computers in Human Behavior*, 29(5), 1987–1996. <https://doi.org/10.1016/j.chb.2013.04.002>.
- Kwon, J.-H., Chung, C.-S., & Lee, J. (2011). The effects of escape from self and interpersonal relationship on the pathological use of Internet games. *Community Mental Health Journal*, 47(1), 113–121. <https://doi.org/10.1007/s10597-009-9236-1>.
- Lemmens, J. S., Valkenburg, P. M., & Gentile, D. A. (2015). The internet gaming disorder scale. *Psychological Assessment*, 27(2), 567–582. <https://doi.org/10.1037/pas0000062>.
- Lemmens, J. S., Valkenburg, P. M., & Peter, J. (2009). Development and validation of a game addiction scale for adolescents. *Media Psychology*, 12(1), 77–95. <https://doi.org/10.1080/15213260802669458>.
- Lemmens, J. S., Valkenburg, P. M., & Peter, J. (2011a). Psychosocial causes and consequences of pathological gaming. *Computers in Human Behavior*, 27(1), 144–152. <https://doi.org/10.1016/j.chb.2010.07.015>.
- Lemmens, J. S., Valkenburg, P. M., & Peter, J. (2011b). The effects of pathological gaming on aggressive behavior. *Journal of Youth and Adolescence*, 40(1), 38–47. <https://doi.org/10.1007/s10964-010-9558-x>.
- Liau, A. K., Choo, H., Li, D., Gentile, D. A., Sim, T., & Khoo, A. (2015). Pathological video-gaming among youth: A prospective study examining dynamic protective factors. *Addiction Research & Theory*, 23(4), 301–308. <https://doi.org/10.3109/16066359.2014.987759>.
- Lindenberg, K., Halasy, K., Szász-Janocha, C., & Wartberg, L. (2018). A phenotype classification of internet use disorder in a large-scale high-school study. *International Journal of Environmental Research and Public Health*, 15(4), 733. <https://doi.org/10.3390/ijerph15040733>.
- Lopez-Fernandez, O., Honrubia-Serrano, M. L., Baguley, T., & Griffiths, M. D. (2014). Pathological video game playing in Spanish and British adolescents: Towards the exploration of Internet gaming disorder symptomatology. *Computers in Human Behavior*, 41, 304–312. <https://doi.org/10.1016/j.chb.2014.10.011>.

- Männikkö, N., Billieux, J., & Kääriäinen, M. (2015). Problematic digital gaming behavior and its relation to the psychological, social and physical health of Finnish adolescents and young adults. *Journal of Behavioral Addictions*, 4(4), 281–288. <https://doi.org/10.1556/2006.4.2015.040>.
- Mentzoni, R. A., Brunborg, G. S., Molde, H., Myrseth, H., Skouveroe, K. J. M., Hetland, J., & Pallesen, S. (2011). Problematic video game use: Estimated prevalence and associations with mental and physical health. *Cyberpsychology, Behavior and Social Networking*, 14(10), 591–596. <https://doi.org/10.1089/cyber.2010.0260>.
- Mihara, S., & Higuchi, S. (2017). Cross-sectional and longitudinal epidemiological studies of Internet gaming disorder: A systematic review of the literature. *Psychiatry and Clinical Neurosciences*, 71(7), 425–444. <https://doi.org/10.1111/pcn.12532>.
- Möble, T., & Rehbein, F. (2013). Predictors of problematic video game usage in childhood and adolescence. *SUCHT*, 59(3), 153–164. <https://doi.org/10.1024/0939-5911.a000247>.
- Müller, K. W., Janikian, M., Dreier, M., Wölfling, K., Beutel, M. E., Tzavara, C., et al. (2015). Regular gaming behavior and internet gaming disorder in European adolescents: Results from a cross-national representative survey of prevalence, predictors, and psychopathological correlates. *European Child & Adolescent Psychiatry*, 24(5), 565–574. <https://doi.org/10.1007/s00787-014-0611-2>.
- Ostovar, S., Allahyar, N., Aminpoor, H., Moafian, F., Nor, M. B. M., & Griffiths, M. D. (2016). Internet addiction and its psychosocial risks (depression, anxiety, stress and loneliness) among Iranian adolescents and young adults: A structural equation model in a cross-sectional study. *International Journal of Mental Health and Addiction*, 14(3), 257–267. <https://doi.org/10.1007/s11469-015-9628-0>.
- Pontes, H. M., Király, O., Demetrovics, Z., & Griffiths, M. D. (2014). The conceptualisation and measurement of DSM-5 Internet Gaming Disorder: The development of the IGD-20 test. *PLoS One*, 9(10), e110137. <https://doi.org/10.1371/journal.pone.0110137>.
- Rasmussen, M., Meilstrup, C. R., Bendtsen, P., Pedersen, T. P., Nielsen, L., Madsen, K. R., & Holstein, B. E. (2015). Perceived problems with computer gaming and Internet use are associated with poorer social relations in adolescence. *International Journal of Public Health*, 60(2), 179–188. <https://doi.org/10.1007/s00038-014-0633-z>.
- Rehbein, F., & Baier, D. (2013). Family-, media-, and school-related risk factors of video game addiction. *Journal of Media Psychology*, 25(3), 118–128. <https://doi.org/10.1027/1864-1105/a000093>.
- Rehbein, F., Kleimann, M., & Möble, T. (2010). Prevalence and risk factors of video game dependency in adolescence: Results of a German nationwide survey. *Cyberpsychology, Behavior and Social Networking*, 13(3), 269–277.
- Rehbein, F., Kliem, S., Baier, D., Möble, T., & Petry, N. M. (2015). Prevalence of Internet gaming disorder in German adolescents: Diagnostic contribution of the nine DSM-5 criteria in a state-wide representative sample. *Addiction (Abingdon, England)*, 110(5), 842–851. <https://doi.org/10.1111/add.12849>.
- Rehbein, F., & Möble, T. (2013). Video game and internet addiction: Is there a need for differentiation? *SUCHT*, 59(3), 129–142. <https://doi.org/10.1024/0939-5911.a000245>.
- Rikkers, W., Lawrence, D., Hafekost, J., & Zubrick, S. R. (2016). Internet use and electronic gaming by children and adolescents with emotional and behavioural problems in Australia - results from the second child and adolescent survey of mental health and wellbeing. *BMC Public Health*, 16, 399. <https://doi.org/10.1186/s12889-016-3058-1>.
- Rosenkranz, T., Müller, K. W., Dreier, M., Beutel, M. E., & Wölfling, K. (2017). Addictive potential of internet applications and differential correlates of problematic use in internet gamers versus generalized internet users in a representative sample of adolescents. *European Addiction Research*, 23(3), 148–156. <https://doi.org/10.1159/000475984>.
- Rumpf, H.-J., Vermulst, A. A., Bischof, A., Kastirke, N., Gürtler, D., Bischof, G., et al. (2014). Occurrence of internet addiction in a general population sample: A latent class analysis. *European Addiction Research*, 20(4), 159–166. <https://doi.org/10.1159/000354321>.

- Schneider, L. A., King, D. L., & Delfabbro, P. H. (2017). Family factors in adolescent problematic Internet gaming: A systematic review. *Journal of Behavioral Addictions*, 6(3), 321–333. <https://doi.org/10.1556/2006.6.2017.035>.
- Shek, D. T. L., & Yu, L. (2012). Internet addiction phenomenon in early adolescents in Hong Kong. *The Scientific World Journal*, 2012, 104304. <https://doi.org/10.1100/2012/104304>.
- Stavropoulos, V., Alexandraki, K., & Motti-Stefanidi, F. (2013). Recognizing internet addiction: Prevalence and relationship to academic achievement in adolescents enrolled in urban and rural Greek high schools. *Journal of Adolescence*, 36(3), 565–576. <https://doi.org/10.1016/j.adolescence.2013.03.008>.
- Stavropoulos, V., Griffiths, M. D., Burleigh, T. L., Kuss, D. J., Doh, Y. Y., & Gomez, R. (2018). Flow on the Internet: A longitudinal study of Internet addiction symptoms during adolescence. *Behaviour & Information Technology*, 37, 1–14. <https://doi.org/10.1080/0144929X.2018.1424937>.
- Strittmatter, E., Kaess, M., Parzer, P., Fischer, G., Carli, V., Hoven, C. W., et al. (2015). Pathological Internet use among adolescents: Comparing gamers and non-gamers. *Psychiatry Research*, 228(1), 128–135. <https://doi.org/10.1016/j.psychres.2015.04.029>.
- Tsitsika, A., Critselis, E., Louizou, A., Janikian, M., Freskou, A., Marangou, E., et al. (2011). Determinants of Internet addiction among adolescents: A case-control study. *The Scientific World Journal*, 11, 866–874. <https://doi.org/10.1100/tsw.2011.85>.
- Van Rooij, A. J., Schoenmakers, T. M., van de Eijnden, R. J. J. M., & van de Mheen, D. (2010). Compulsive Internet use: The role of online gaming and other internet applications. *The Journal of Adolescent Health*, 47(1), 51–57. <https://doi.org/10.1016/j.jadohealth.2009.12.021>.
- Wang, C.-W., Chan, C. L. W., Mak, K.-K., Ho, S.-Y., Wong, P. W. C., & Ho, R. T. H. (2014). Prevalence and correlates of video and internet gaming addiction among Hong Kong adolescents: A pilot study. *The Scientific World Journal*, 2014, 874648. <https://doi.org/10.1155/2014/874648>.
- Wartberg, L., Kriston, L., Kramer, M., Schwedler, A., Lincoln, T. M., & Kammerl, R. (2017). Internet gaming disorder in early adolescence: Associations with parental and adolescent mental health. *European Psychiatry: The Journal of the Association of European Psychiatrists*, 43, 14–18. <https://doi.org/10.1016/j.eurpsy.2016.12.013>.
- Witek, C. T., Finserås, T. R., Pallesen, S., Mentzoni, R. A., Hanss, D., Griffiths, M. D., & Molde, H. (2016). Prevalence and predictors of video game addiction: A study based on a national representative sample of gamers. *International Journal of Mental Health and Addiction*, 14(5), 672–686. <https://doi.org/10.1007/s11469-015-9592-8>.
- World Health Organization. (2018). *International classification of diseases: ICD-11 for mortality and morbidity statistics*. Retrieved from <https://icd.who.int/browse11/l-m/en>
- Xu, Z., & Yuan, Y. (2008). The impact of motivation and prevention factors on game addiction. In *Special Interest Group on Human-Computer Interaction, Proceedings 15*. Retrieved from <http://aisel.aisnet.org/sighci2008/15>

Chapter 3

Etiology of Internet Use Disorders



3.1 Behavioral Psychology and Neurobiological Etiology Models

From a neurobiological perspective, Internet use disorders (IUD) show a large overlap with substance-related disorders such as alcohol or drug addiction (Kuss & Griffiths, 2012). In contrast to substance-related addictions, “gaming disorder” is classified under the category “disorders due to addictive behaviors” in the ICD-11 (World Health Organization, 2018). Within the behavioral addiction framework (Brand, Young, Laier, Wölfling, & Potenza, 2016; Kuss, Griffiths, Karila, & Billieux, 2014; Tao et al., 2010), the addictive behavior can be considered as parallel to an addictive substance. It increases physiological arousal and causes a release of dopamine in the brain which is experienced as rewarding and leads to a repetition of the behavior.

In this approach, classical and operant conditioning play a crucial role in explaining the development and perpetuation of the disorder (Grüsser & Thalemann, 2006). An initially neutral, unconditioned stimulus (UCS, e.g., looking at a smartphone, coming home from school, an unpleasant emotion, a stressful situation, feelings of loneliness) is associated with a certain behavior or unconditioned reaction (UCR, e.g., playing a video game). When this association is repeated several times, the previously neutral stimulus is linked to the conditioned reaction (CR) of playing video games or using other Internet applications and thereby becomes a conditioned stimulus (CS). The individual learns that the behavior helps to relieve negative emotional states. This behavior is then rewarded by an experience of pleasure, self-efficacy, or flow (positive reinforcement, C+). On a neurobiological level, this is associated with a release of dopamine in the brain. Simultaneously, the Internet activity helps to avoid negative emotional states such as anxiety, loneliness or sadness (negative reinforcement, C–). This reward pattern entails a process of operant conditioning, initiates a reward expectancy, and encourages the individual to repeat the behavior. As a consequence, the video game or Internet application is no longer used for gratification but in order to avoid negative emotional states (compensation).

Learning theories are of particular significance for the development of treatment approaches, especially behavioral therapy approaches, as learned behavior can be unlearned by the same mechanisms. One main goal of behavioral therapy on Internet use disorders is to establish alternative rewarding behaviors and coping mechanisms.

Robinson and Berridge (2008) expanded the learning approach for substance-related addictions in their incentive sensitization theory. In this view, repeated consumption of a drug triggers a neural sensitization which is marked by an increase in dopamine transmission in the nucleus accumbens and the striatum. This contributes to a state of “wanting” or “craving” and to drug-seeking behavior. The decision to consume is no longer taken consciously, as the individual is aware of its negative consequences and does not “like” the substance in question. However, “wanting” outdoes “liking” and increases the motivation to consume. This mechanism also leads to an implicit addiction memory which enhances the odds of relapse. Addicted individuals show an increased attention for stimuli that are related to the addictive substance, e.g. pictures of alcoholic beverages. Similar mechanisms have been found in behavioral addictions such as pathological gambling (Grüsser, Plöntzke, & Albrecht, 2005; Rømer Thomsen, Fjorback, Møller, & Lou, 2014) and video gaming (Thalemann, Wölfling, & Grüsser, 2007). Over time, the addictive behavior becomes the only means of experiencing rewards and regulating emotions and other activities are no longer experienced as pleasant or comforting.

Several studies have demonstrated that Internet use disorders is associated with similar neuronal activation patterns as substance-related addictions (Kuss & Griffiths, 2012). Especially the dorsolateral prefrontal cortex and the nucleus accumbens seem to play a crucial role as they are activated in a “cue-reactivity paradigm” in which Internet-related cues (e.g. screenshots of certain websites or online games) are presented to individuals with Internet use disorders (Ko et al., 2009; Niu et al., 2016). Both brain areas are linked to motivation and emotion. Studies using voxel-based morphometry, a technique to measure the density and distribution of gray matter in the brain, found that individuals with Internet use disorders have a reduced density of gray matter in the insula and the cingulate cortex. This finding can be linked to an impaired perception of emotional states and associated cognitive responses (e.g., the decision to initiate a video game; Zhou et al., 2011). Individuals with Internet use disorders often report “boredom” as a motive for gaming or other Internet activities. However, as patients learn to differentiate their emotions during therapy, other emotional states such as sadness or fear lie behind the boredom motive. This impaired emotional differentiation could be associated with the above-mentioned changes in gray matter (Müller & Wölfling, 2017).

3.2 Integrated Models and Maladaptive Coping

Behavioral addictions are, like other mental disorders, accompanied by a multitude of associated factors (see Chap. 2: Characteristics and Conditions Associated with Internet Use Disorders). The integrated process model of Internet addiction (Müller & Wölfling, 2017; Wölfling & Müller, 2009) is based on a diathesis-stress approach

and includes provoking and maintaining factors. It postulates that certain biological factors, e.g. a specific polymorphism of the serotonin transporter gene 5HTTLPR, increase the vulnerability for Internet use disorders, specifically Internet gaming disorder. 5HTTLPR is common in individuals with depression (Lee et al., 2008) and in those with increased neuroticism, reduced extraversion and conscientiousness, high boredom susceptibility, and high impulsivity. Furthermore, negative family interactions and a poor social environment seem to play a crucial role. On the behavioral level, Internet use disorder is associated with increased social inhibition, reduced performance orientation, and reduced structuring. One key factor in the development of addictive behavior is the maladaptive coping with negative emotions. Affected individuals often avoid negative emotions by playing video games and escaping into the virtual world. Video games or other Internet applications offer opportunities for those who do not experience success, belonging, or growth in real life. This experience can be made in the virtual environment: The player can have a successful avatar, belong to a guild, and communicate with others from a safe distance. Thus, the Internet or gaming activity itself has certain features that facilitate the development of a behavioral addiction, such as social responsibility or role changes.

Research confirms that dysfunctional emotion regulation is crucial in the development of Internet use disorders (Kwon, Chung, & Lee, 2011; Young, 1998; Young & de Abreu, 2011). When individuals experience a discrepancy between the real self and the desired self or face real-life problems and consequently experience negative emotions, a maladaptive and avoidant coping style is common (Casale, Caplan, & Fioravanti, 2016; Hormes, Kearns, & Timko, 2014; Milani, Osualdella, & Di Blasio, 2009). Adolescents who suffer from Internet use disorders show more maladaptive emotion regulation strategies (e.g., suppression or avoidance) than adaptive strategies (e.g., problem solving or seeking social support). The lack of such functional strategies and social competences is a risk factor for Internet use disorders (Gentile et al., 2011; Grüsser, Thalemann, Albrecht, & Thalemann 2005; Strittmatter et al., 2016; Tang et al., 2014). Furthermore, online applications and video games are often used to avoid unpleasant tasks which might explain the correlation between Internet use disorders and procrastination (Davis, Flett, & Besser, 2002; Thatcher, Wretschko, & Fridjhon, 2008).

Over time, negative coping combined with social withdrawal can increase the dichotomy between the (unsuccessful) real life and the (successful) virtual life of an individual. Neurobiological sensitization, cognitive distortions (e.g. “I will never be good at school!” or “Only gaming is real fun!”), favorable feedback (positive reinforcement) in the virtual world, and the avoidance of stress in the real world (negative reinforcement) uphold the addiction process.

Another integrated approach is the I-PACE model (Brand et al., 2016) which states that the addictive use of specific Internet applications is a consequence of psychological and neurobiological predispositions and specific moderators. Predispositions include personality factors such as high impulsivity, low self-esteem, and low conscientiousness, bio-psychological dispositions such as an increased vulnerability for stress, genetic factors, and early childhood experiences, comorbid psychopathology as well as social cognitions such as perceived loneliness, perceived

social support, or social distrust. The addictive process is moderated by maladaptive coping styles and Internet-related cognitions such as the expectancy of the positive effect of the Internet activity and related cognitive biases and distortions. Specific triggers, e.g. looking at a smartphone or a stressful situation are responded to with a specific maladaptive affective and cognitive response (cue reactivity, the need to regulate negative emotions, and seeing the Internet activity as the only means to do so) and lead, in combination with reduced executive control, to an excessive Internet use that is consolidated by learning mechanisms. Over time, the gratifying effect of the Internet activity is reduced and the compensatory or coping effect increases. The individual loses control over his or her Internet activity and there is an increase of negative consequences in the real world. The I-PACE model also builds on the idea of a reinforcement cycle: Internet-related cognitive biases (e.g. attentional biases, positive attitudes toward the Internet activity) trigger a certain affective and cognitive response to Internet-related stimuli, which in turn causes the decision to use the Internet application. This leads to a gratification which again reinforces Internet-related biases. A reduced executive control further increases the probability of using the Internet activity as a coping strategy, which is functional in the short term, but dysfunctional on the long run.

3.3 The PROTECT Etiology Model

In the developmental, cognitive behavioral etiology model that underlies the PROTECT intervention, we assume that, in line with the I-PACE model (Brand et al., 2016), Internet use disorders develop as a consequence of two reinforcement mechanisms. The primary mechanism (gratification) leads to a repetitive and increasing use of the Internet, because it is perceived as highly rewarding. The secondary mechanism (compensation) occurs when priority is given to the Internet use resulting in a neglect of other activities that usually have powerful effects on our mood such as physical exercise, social activities, success (e.g. academic, arts, or personally important projects), service (helping others), or nature-associated activities (Rohde, Brière, & Stice, 2018). These intrinsically rewarding behaviors typically develop as parent-independent leisure activities during adolescence and are extremely important for mood regulation. A lack or loss of rewarding behavior is known to be a major cause of negative mood and depression (Lewinsohn, 1974). However, a loss of real-world gratification is exactly what occurs when priority is shifted to the Internet use. The Internet needs to be used even more excessively, because it has become the most rewarding and remaining behavior. Thus, the initial gratification experienced through the Internet use shifts to a compensation of emotional distress.

As known from other behavioral addictions, the compulsive, pathological Internet use is an attempt to avoid negative emotions caused by a loss of real-world reinforcement which in turn is caused by a priority shift and neglect of real-world activities. This downward spiral leads to a compulsive Internet use that is continued despite the occurrence of negative consequences, associated with a loss of control over the Internet activity.

As illustrated in Fig. 1, the PROTECT etiology model assumes that adolescent Internet use disorder is strongly associated with maladaptive coping of negative affect in three main problem areas. These are (1) motivational problems or boredom susceptibility, (2) performance anxiety that is often associated with the procrastination of unpleasant tasks, and (3) social anxiety, often paired with a lack of social skills. These conditions have been found to be risk factors associated with adolescent Internet use disorders (e.g., see Chap. 2: Characteristics and Conditions Associated with Internet Use Disorders), and the excessive Internet use has been found to be a dominant, maladaptive emotion regulation strategy which is used to compensate these negative emotional states (Brand et al., 2016).

Moreover, the PROTECT etiology model assumes that these negative emotional states have cognitive antecedents. More precisely, cognitive distortions (especially a negative attribution style, overgeneralization, and catastrophizing) lead to a negative appraisal of boring situations, performance situations or social situations, which causes negative emotions (see Fig. 2). These negative emotions can be regulated by video gaming or other Internet activities. For example, an upcoming class test in math can be associated with a maladaptive cognition such as “I will never understand geometry,” which might lead to unpleasant emotions such as test and school anxiety. A maladaptive behavioral consequence might be the tendency to play video games to suppress the anxiety. This coping style is functional in the short term as it causes positive emotions and gratification. However, it entails negative long-term consequences for the individual who elicits even more unpleasant emotions that need to be regulated and compensated. The individual will most likely use the Internet or gaming activity to regulate these negative emotions which leads to a vicious circle.

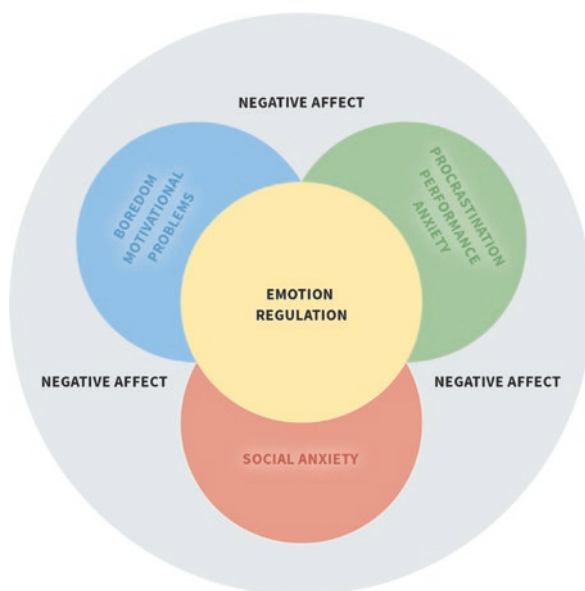


Fig. 1 Risk Factors of Internet Use Disorders

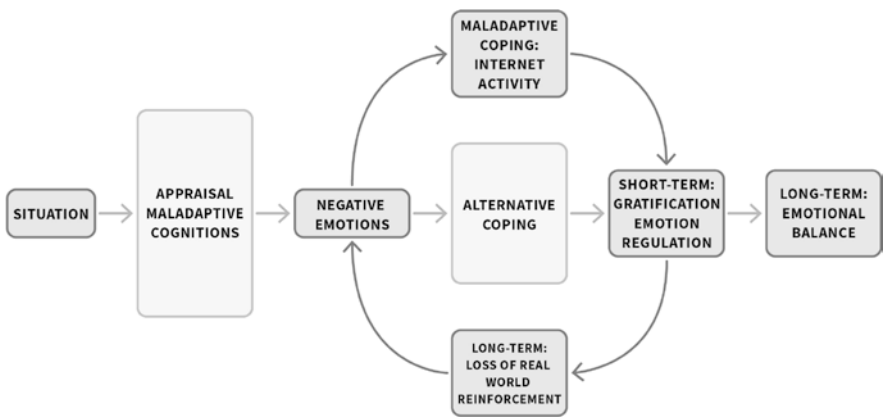


Fig. 2 Cognitive Behavioral Etiology Model (Vicious Circle)

Furthermore, the model assumes that this dysfunctional process can be modified by specific behavioral, cognitive, and emotional therapeutic interventions. Cognitive interventions target the modification of maladaptive cognitions. For example, a more functional appraisal of the upcoming class test might be the cognition “I have some days left to practice,” resulting in a more functional emotional consequence (e.g., confidence), which might result in a more functional behavioral tendency, such as starting to prepare for the test or asking others for help. Behavior-oriented interventions (such as behavioral activation and problem-solving skills) and emotion regulation interventions target the development of alternative coping skills to achieve emotional balance. The PROTECT intervention, which was developed on the basis of this etiology model, is described in Chap. 5: The PROTECT Intervention and Part 2 of this book.

3.4 Conclusion

Theoretical models and empirical evidence underline the link between maladaptive emotion regulation and Internet use disorders. The PROTECT etiology model assumes that a vicious circle results from a dysfunctional process of maladaptive cognitions, negative emotions and maladaptive behaviors. Moreover, it assumes that this dysfunctional process can be modified by cognitive interventions that target maladaptive cognitions, as well as behavioral interventions and emotion regulation interventions that target the development of alternative coping strategies.

References

- Brand, M., Young, K. S., Laier, C., Wölfling, K., & Potenza, M. N. (2016). Integrating psychological and neurobiological considerations regarding the development and maintenance of specific Internet-use disorders: An Interaction of Person-Affect-Cognition-Execution (I-PACE) model. *Neuroscience and Biobehavioral Reviews*, 71, 252–266. <https://doi.org/10.1016/j.neubiorev.2016.08.033>.
- Casale, S., Caplan, S. E., & Fioravanti, G. (2016). Positive metacognitions about internet use: The mediating role in the relationship between emotional dysregulation and problematic use. *Addictive Behaviors*, 59, 84–88. <https://doi.org/10.1016/j.addbeh.2016.03.014>.
- Davis, R. A., Flett, G. L., & Besser, A. (2002). Validation of a new scale for measuring problematic Internet use: Implications for pre-employment screening. *Cyber Psychology & Behavior*, 5(4), 331–345. <https://doi.org/10.1089/109493102760275581>.
- Gentile, D. A., Choo, H., Liau, A., Sim, T., Li, D., Fung, D., & Khoo, A. (2011). Pathological video game use among youths: A two-year longitudinal study. *Pediatrics*, 127(2), e319–e329. <https://doi.org/10.1542/peds.2010-1353>.
- Grüsser, S. M., Plöntzke, B., & Albrecht, U. (2005). Pathologisches Glücksspiel: Eine empirische Untersuchung des Verlangens nach einem stoffungebundenen Suchtmittel. = Pathological gambling: An empirical study of the desire for addictive substances. *Der Nervenarzt*, 76(5), 592–596. <https://doi.org/10.1007/s00115-004-1764-x>.
- Grüsser, S. M., & Thalemann, C. N. (2006). Verhaltenssucht: Diagnostik, Therapie, Forschung (1. Aufl.). In *Aus dem Programm Huber. Klinische Praxis*. Bern, Switzerland: Huber.
- Grüsser, S. M., Thalemann, R., Albrecht, U., & Thalemann, C. N. (2005). Exzessive Computernutzung im Kindesalter Ergebnisse einer psychometrischen Erhebung. *Wiener Klinische Wochenschrift*, 117(5–6), 188–195.
- Hormes, J. M., Kearns, B., & Timko, C. A. (2014). Craving Facebook? Behavioral addiction to online social networking and its association with emotion regulation deficits. *Addiction*, 109(12), 2079–2088. <https://doi.org/10.1111/add.12713>.
- Ko, C.-H., Liu, G.-C., Hsiao, S., Yen, J.-Y., Yang, M.-J., Lin, W.-C., et al. (2009). Brain activities associated with gaming urge of online gaming addiction. *Journal of Psychiatric Research*, 43(7), 739–747. <https://doi.org/10.1016/j.jpsychires.2008.09.012>.
- Kuss, D. J., & Griffiths, M. D. (2012). Internet and gaming addiction: A systematic literature review of neuroimaging studies. *Brain Sciences*, 2(3), 347–374. <https://doi.org/10.3390/brainsci2030347>.
- Kuss, D. J., Griffiths, M. D., Karila, L., & Billieux, J. (2014). Internet addiction: A systematic review of epidemiological research for the last decade. *Current Pharmaceutical Design*, 20(25), 4026–4052.
- Kwon, J.-H., Chung, C.-S., & Lee, J. (2011). The effects of escape from self and interpersonal relationship on the pathological use of Internet games. *Community Mental Health Journal*, 47(1), 113–121. <https://doi.org/10.1007/s10597-009-9236-1>.
- Lee, Y. S., Han, D. H., Yang, K. C., Daniels, M. A., Na, C., Kee, B. S., & Renshaw, P. F. (2008). Depression like characteristics of 5HTTLPR polymorphism and temperament in excessive internet users. *Journal of Affective Disorders*, 109(1–2), 165–169. <https://doi.org/10.1016/j.jad.2007.10.020>.
- Lewinsohn, P. M. (1974). A behavioral approach to depression. In R. J. Friedman & M. M. Katz (Eds.), *The psychology of depression: Contemporary theory and research*. John Wiley & Sons.
- Milani, L., Osualdella, D., & Di Blasio, P. (2009). Quality of interpersonal relationships and problematic internet use in adolescence. *Cyberpsychology & Behavior*, 12(6), 681–684. <https://doi.org/10.1089/cpb.2009.0071>.
- Müller, K., & Wölfling, K. (2017). *Pathologischer Mediengebrauch und Internetsucht* (1. Auflage). Sucht Track 2. Stuttgart, Germany: Verlag W. Kohlhammer. Retrieved from http://www.kohlhammer.de/wms/instances/KOB/appDE/nav_product.php?product=978-3-17-023361-4

- Niu, G.-F., Sun, X.-J., Subrahmanyam, K., Kong, F.-C., Tian, Y., & Zhou, Z.-K. (2016). Cue-induced craving for Internet among Internet addicts. *Addictive Behaviors*, 62, 1–5. <https://doi.org/10.1016/j.addbeh.2016.06.012>.
- Robinson, T. E., & Berridge, K. C. (2008). Review. The incentive sensitization theory of addiction: Some current issues. *Philosophical Transactions of the Royal Society of London Series B, Biological Sciences*, 363(1507), 3137–3146. <https://doi.org/10.1098/rstb.2008.0093>.
- Rohde, P., Brière, F. N., & Stice, E. (2018). Major depression prevention effects for a cognitive-behavioral adolescent indicated prevention group intervention across four trials. *Behaviour Research and Therapy*, 100, 1–6. <https://doi.org/10.1016/j.brat.2017.10.013>.
- Rømer Thomsen, K., Fjorback, L. O., Møller, A., & Lou, H. C. (2014). Applying incentive sensitization models to behavioral addiction. *Neuroscience and Biobehavioral Reviews*, 45, 343–349. <https://doi.org/10.1016/j.neubiorev.2014.07.009>.
- Strittmatter, E., Parzer, P., Brunner, R., Fischer, G., Durkee, T., Carli, V., et al. (2016). A 2-year longitudinal study of prospective predictors of pathological Internet use in adolescents. *European Child & Adolescent Psychiatry*, 25(7), 725–734. <https://doi.org/10.1007/s00787-015-0779-0>.
- Tang, J., Yu, Y., Du, Y., Ma, Y., Zhang, D., & Wang, J. (2014). Prevalence of internet addiction and its association with stressful life events and psychological symptoms among adolescent internet users. *Addictive Behaviors*, 39(3), 744–747. <https://doi.org/10.1016/j.addbeh.2013.12.010>.
- Tao, R., Huang, X., Wang, J., Zhang, H., Zhang, Y., & Li, M. (2010). Proposed diagnostic criteria for internet addiction. *Addiction*, 105(3), 556–564. Retrieved from <http://www.re-di-bw.de/db/ebsco.php/search.ebscohost.com/login.aspx%3fdirect%3dtrue%26db%3dpsych%26AN%3d2010-02624-027%26site%3dehost-live>.
- Thalemann, R., Wölfling, K., & Grüsser, S. M. (2007). Specific cue reactivity on computer game-related cues in excessive gamers. *Behavioral Neuroscience*, 121(3), 614–618. <https://doi.org/10.1037/0735-7044.121.3.614>.
- Thatcher, A., Wretschko, G., & Fridjhon, P. (2008). Online flow experiences, problematic Internet use and Internet procrastination. *Computers in Human Behavior*, 24(5), 2236–2254. <https://doi.org/10.1016/j.chb.2007.10.008>.
- Wölfling, K., & Müller, K. (2009). Computerspielsucht. In D. Batthyany & A. Pritz (Eds.), *Rausch ohne Drogen - Substanzungebundene Süchte* (pp. 291–307). New York, NY: Springer.
- World Health Organization. (2018). *International classification of diseases: ICD-11 for mortality and morbidity statistics*. Retrieved from <https://icd.who.int/browse11/l-m/en>
- Young, K. S. (1998). Internet addiction: The emergence of a new clinical disorder. *Cyberpsychology & Behavior*, 1(3), 237–244. <https://doi.org/10.1089/cpb.1998.1.237>.
- Young, K. S., & de Abreu, C. N. (2011). *Internet addiction: A handbook and guide to evaluation and treatment*. Hoboken, NJ: Wiley.
- Zhou, Y., Lin, F.-C., Du, Y.-S., Qin, L.-D., Zhao, Z.-M., Xu, J.-R., & Lei, H. (2011). Gray matter abnormalities in Internet addiction: A voxel-based morphometry study. *European Journal of Radiology*, 79(1), 92–95. <https://doi.org/10.1016/j.ejrad.2009.10.025>.

Chapter 4

Treatment and Prevention for Adolescents with Internet Use Disorders



4.1 Introduction

Kimberly Young, pioneer in research on Internet use disorders (IUD), was the first to call attention to the potentially harmful effects of the Internet (Young, 1996). Over the last two decades, a large number of studies have reported significant associations between Internet use disorders and abnormal psychopathology (see Chap. 2: Characteristics and Conditions Associated with Internet Use Disorders) and warned about the consequences of Internet use disorders. Researchers have appealed to the responsible stakeholders in the health care system to establish an official diagnosis for Internet use disorders and to develop and investigate prevention and treatment approaches.

The inclusion of “Internet gaming disorder” as a preliminary diagnosis in the third section of the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) was a milestone that provided a long-desired uniform definition and hence a common ground for further research. However, Internet use disorders, a wider term comprising non-gaming Internet use as well (e.g., social media, online pornography), has not been included yet. A further milestone was the definition of “gaming disorder” in the 11th version of the International Classification of Diseases (ICD-11; World Health Organization, 2018). Accordingly, the development of effective, evidence-based prevention and treatment interventions for the disorder became a global health issue. Given the high rates of comorbid disorders, Internet use disorders intervention programs should not only focus on specific symptoms, but include evaluated approaches for the treatment of depressive symptoms, anxiety, and other comorbid phenomena in order to improve overall quality of life.

The scope of prevention includes avoiding the emergence of a disease before it occurs or at least delaying its onset. In this regard, prevention typically targets the beneficial modification of risk factors. Treatment programs act complementary: They address individuals who are currently suffering from a disease and aim to reduce symptom severity or to cure individuals from a disease. The state of research

on Internet use disorders prevention and treatment is still in its infancy (Szász-Janocha, Kindt, Halasy, & Lindenberg, 2019). Depending on inclusion criteria, international reviews report between 8 and 20 prevention studies (King, Delfabbro, Doh, & Wu, 2018; Throuvala, Griffiths, Rennoldson, & Kuss, 2019; Vondráčková & Gabrhelík, 2016) and between 26 and 30 treatment studies (King, Delfabbro, & Wu, 2017; Zajac, Ginley, Chang, & Petry, 2017) on Internet use disorders.

4.2 Prevention

Prevention can be divided into the following subtypes which differ according to the target group. Universal prevention is designed for entire populations and comprises general information transfer among other interventions. Selective prevention addresses subgroups, e.g. individuals with an elevated risk level of a disease, while indicated programs focus on individuals suffering from first symptoms. Selective and indicated prevention approaches are often summarized as “selective-indicated” interventions (Junge-Hoffmeister, 2009).

Prevention or intervention at an early stage is beneficial for reducing the risk of symptom manifestation with the overall aim to improve prognosis. This is of particular importance, since individuals suffering from Internet use disorders are characterized by a low compliance and a low treatment motivation (Szász-Janocha, Vonderlin, & Lindenberg, submitted; Lindenberg, Szász-Janocha, Schoenmaekers, Wehrmann, & Vonderlin, 2017; Petersen & Thomasius, 2010; Wölfling et al., 2019; Wölfling, Leménager, Peukert, & Batra, 2013), leading to a limited use of the available treatments.

In their review, King et al. (2018) provide a résumé of available prevention studies and public health policies of Internet use disorders in the USA, the United Kingdom, Australia, China, Germany, Japan, and South Korea. They shed light on regional and national differences in prevention strategies. While prevention of Internet use disorders in Western countries is managed predominantly by non-profit organizations, offering almost exclusively behavioral prevention, prevention in East Asian countries is mainly regulated by the government and thus often comprises both structural and behavioral approaches (King et al., 2018). However, data on efficacy and cost-effectiveness is scarce, especially for structural prevention programs. The authors identified 13 prevention studies in their review. Among these, there was only one randomized controlled trial (RCT). This is alarming, given that RCTs are the gold standard for efficacy and effectiveness studies. This RCT stems from Germany and showed promising results investigating a universal school-based program (Walther, Hanewinkel, & Morgenstern, 2014). The intervention consisted of a 4-session media literacy program that was conducted by trained teachers during class. The program aimed to stimulate a discussion about various application types (Internet use, communication, gaming, and gambling) and to strengthen the students’ self-monitoring and self-reflection skills. The results show a long-term effect of the preventive intervention after 12 months in the intervention group as compared to the control group. In line with this study, other trials showed beneficial effects of

the investigated prevention programs as well. Due to several methodological deficits (e.g., pretest-posttest design only, lack of control groups, deviating outcome measures from symptom severity), however, their validity is limited (King et al., 2018). The majority of the programs were based on cognitive behavioral techniques, such as psychoeducation (e.g., information about characteristics of hazardous use and possible consequences), cognitive restructuring, or skills training (problem-solving skills, emotion regulation skills, social competences).

School-based prevention programs show the broadest evidence base. A recent literature review focusing on school-based Internet use disorders prevention programs identified 20 studies from Germany, the Netherlands, Italy, Australia, Korea, Hong Kong, USA, and Turkey (Throuvala et al., 2019). The reported studies were predominantly based on universal prevention programs. However, only seven studies investigated the effectiveness of the programs and they showed mixed results (Throuvala et al., 2019). Nevertheless, school-based prevention programs are widely used and play a crucial role for prevention due to several reasons: First, they offer a low-threshold access to health services without the need for additional effort from the students (they neither have to look for an adequate contact point nor keep an appointment apart). Second, prevention in the school environment enables an early access to health services for a wide range of potentially vulnerable adolescents. Third, high-school students represent a crucial age group, since Internet use disorders prevalence rates increase during adolescence (Karacic & Oreskovic, 2017; Lindenberg, Halasy, Szász-Janocha, & Wartberg, 2018).

4.3 Treatment

While prevention focuses on avoiding the manifestation of Internet use disorders, treatment addresses individuals who already suffer from Internet use disorders. The first treatment center focusing on Internet use disorders opened in China in 2006 (Young & de Abreu, 2011). However, the current state of research on Internet use disorders treatment is similar to that on Internet use disorders prevention research. Reviews report increasing research on treatment, but most studies lack well-designed and evidence-based interventions (King et al., 2017; Zajac et al., 2017). King et al. (2017) evaluated the reporting quality of 30 Internet use disorders treatment studies according to the guidelines of the Consolidating Standards of Reporting Trials statement (CONSORT) and give an overview on the current state of research. The authors report a persistently deficient study quality over the last few years, lacking randomization, blinding procedures, control groups, and follow-up measures as well as scarce information on study and treatment procedures and criticize the inconsistent conceptualization and operationalization of Internet use disorders. The studies comprised individual as well as group-based interventions. Most of the reported studies were conducted in a clinical setting ($n = 19$), some programs were school-based or conducted in a counseling setting ($n = 7$), and a minority was online-based ($n = 3$) and home-based ($n = 1$). With respect to the intervention methods, the vast majority of the reported studies applied cognitive behavioral or related

therapeutic techniques and only a few investigated other intervention methods like pharmacology or electro-acupuncture. Despite the underlying restrictions due to methodological weaknesses, the authors conclude that interventions based on cognitive behavioral techniques seem to be most effective (King et al., 2017).

Another review from Zajac et al. (2017) evaluated 26 treatment studies on Internet use disorders according to criteria of evidence-based interventions, e.g. including a control group and a treatment manual (Chambless & Hollon, 1998). The authors concluded that not a single study (regardless of treatment type like cognitive behavioral or medication treatment) met all the criteria. Despite the increased efforts over the last few years, research on effectiveness is limited for any treatment to date.

Two promising treatment programs have been recently evaluated in clinical trials (Szász-Janocha, Vonderlin, & Lindenberg, 2019; Wölfling et al., 2019). The first program called “STICA” (short-term treatment for Internet and computer game addiction; Wölfling et al., 2019) is a manualized CBT program for adults. Its effectiveness was demonstrated in a multicenter randomized controlled trial. Remission rates were higher in the treatment group as compared to a wait-list control group.

The second program called “PROTECT” is described in this book. In contrast to STICA, it focuses on the treatment of adolescents. The intervention was positively evaluated in a prevention as well as in a treatment setting. The results of these trials are reported in Chap. 5: The PROTECT Intervention (Lindenberg, Kindt, & Szász-Janocha, submitted; Szász-Janocha et al., submitted; Szász-Janocha et al., 2019).

4.4 Conclusion

Overall, it can be concluded that research on Internet use disorders interventions has increased over the last decades, but there is still a need for further investigation, given the numerous limitations that have been identified. Existing prevention and treatment interventions have not been sufficiently examined, and research on different types of interventions is scarce. Moreover, little is known about who benefits from which intervention type under which conditions. In the long term, the health system will succeed only if these questions are answered and if effective and efficient interventions can be offered. The first step in this direction is to conduct evidence-based intervention studies with high-quality standards.

References

- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders, 5th Edition Arlington, TX: American Psychiatric Publishing.
- Chambless, D. L., & Hollon, S. D. (1998). Defining empirically supported therapies. *Journal of Consulting and Clinical Psychology*, 66(1), 7–18.

- Junge-Hoffmeister, J. (2009). Prävention Psychischer Störungen. In S. Schneider & J. Margraf (Eds.), *Lehrbuch der Verhaltenstherapie: Band 3: Störungen im Kindes- und Jugendalter* (pp. 901–922). Heidelberg, Germany: Springer Medizin Verlag.
- Karacic, S., & Oreskovic, S. (2017). Internet addiction and mental health status of adolescents in Croatia and Germany. *Psychiatria Danubina*, 29(3), 313–321. <https://doi.org/10.24869/psyd.2017.313>.
- King, D. L., Delfabbro, P. H., Doh, Y. Y., Wu, A. M. S., Kuss, D. J., Pallesen, S., ... Sakuma, H. (2018). Policy and prevention approaches for disordered and hazardous gaming and internet use: An international perspective. *Prevention Science*, 19(2), 233–249. doi:<https://doi.org/10.1007/s11121-017-0813-1>.
- King, D. L., Delfabbro, P. H., Wu, A. M. S., Doh, Y. Y., Kuss, D. J., Pallesen, S., ... Sakuma, H. (2017). Treatment of Internet gaming disorder: An international systematic review and CONSORT evaluation. *Clinical Psychology Review*, 54, 123–133. doi:<https://doi.org/10.1016/j.cpr.2017.04.002>.
- Lindenberg, K., Halasy, K., Szász-Janocha, C., & Wartberg, L. (2018). A phenotype classification of internet use disorder in a large-scale high-school study. *International Journal of Environmental Research and Public Health*, 15(4), 733. <https://doi.org/10.3390/ijerph15040733>.
- Lindenberg, K., Kindt, S., & Szász-Janocha, C. (submitted). CBT-based indicated prevention in high-schools reduces symptoms of Internet Use Disorders over 12 months.
- Lindenberg, K., Szász-Janocha, C., Schoenmaekers, S., Wehrmann, U., & Vonderlin, E. (2017). An analysis of integrated health care for internet use disorders in adolescents and adults. *Journal of Behavioral Addictions*, 6(4), 579–592. <https://doi.org/10.1556/2006.6.2017.065>.
- Petersen, K. U., & Thomasius, R. (2010). *Beratungs- und Behandlungsangebote zum pathologischen Internetgebrauch in Deutschland*. Lengerich, Germany: Pabst Science Publishers.
- Szász-Janocha, C., Kindt, S., Halasy, K., & Lindenberg, K. (2019). Prävention und Frühintervention bei Internetbezogenen Störungen - (inter-)nationaler Stand der Forschung. *Suchtmedizin (Addiction Medicine)*, 21(4), 259–270.
- Szász-Janocha, C., Vonderlin, E., & Lindenberg, K. (2019). Die Wirksamkeit eines Frühinterventionsprogramms für Jugendliche mit Computerspiel- und Internetabhängigkeit: Mittelfristige Effekte der PROTECT+ Studie. *Zeitschrift für Kinder- und Jugendpsychiatrie und Psychotherapie*, 48, 1–12. <https://doi.org/10.1024/1422-4917/a000673>.
- Szász-Janocha, C., Vonderlin, E. & Lindenberg, K. (submitted). Treatment outcomes of a CBT-based group intervention for adolescents with Internet use disorders.
- Throuvala, M. A., Griffiths, M. D., Rennoldson, M., & Kuss, D. J. (2019). School-based prevention for adolescent internet addiction: Prevention is the key. A systematic literature review. *Current Neuropharmacology*, 17(6), 507–525. <https://doi.org/10.2174/1570159X16666180813153806>.
- Vondráčková, P., & Gabrhelík, R. (2016). Prevention of Internet addiction: A systematic review. *Journal of Behavioral Addictions*, 5(4), 568–579. <https://doi.org/10.1556/2006.5.2016.085>.
- Walther, B., Hanewinkel, R., & Morgenstern, M. (2014). Effects of a brief school-based media literacy intervention on digital media use in adolescents: Cluster randomized controlled trial. *Cyberpsychology, Behavior and Social Networking*, 17(9), 616–623. <https://doi.org/10.1089/cyber.2014.0173>.
- Wölfling, K., Leménager, T., Peukert, P., & Batra, A. (2013). Computerspiel- und Internetsucht und pathologisches Glücksspiel. Therapieansätze. *Der Nervenarzt*, 84(5), 576–583. <https://doi.org/10.1007/s00115-012-3722-3>.
- Wölfling, K., Müller, K. W., Dreier, M., Ruckes, C., Deuster, O., Batra, A., ... Beutel, M. E. (2019). Efficacy of short-term treatment of internet and computer game Addiction: A Randomized Clinical Trial. *JAMA Psychiatry*, 76, 1018. <https://doi.org/10.1001/jamapsychiatry.2019.1676>.
- World Health Organization (2018). *International classification of diseases: ICD-11 for mortality and morbidity statistics*. Retrieved from <https://icd.who.int/browse11/l-m/en>

- Young, K. S. (1996). Psychology of computer use: XI. Addictive use of the Internet: A case that breaks the stereotype. *Psychological Reports*, 79(3 Pt 1), 899–902. <https://doi.org/10.2466/pr0.1996.79.3.899>.
- Young, K. S., & de Abreu, C. N. (2011). *Internet addiction: A handbook and guide to evaluation and treatment*. Hoboken, NJ: Wiley.
- Zajac, K., Ginley, M. K., Chang, R., & Petry, N. M. (2017). Treatments for Internet gaming disorder and Internet addiction: A systematic review. *Psychology of Addictive Behaviors*, 31(8), 979–994. <https://doi.org/10.1037/adb0000315>.

Chapter 5

The PROTECT Intervention



5.1 Setting and Target Group

The PROTECT intervention is designed for adolescents between 12 and 18 years of age. Originally, the intervention was developed as an indicated prevention program targeting adolescents with an increased risk for Internet use disorders (IUD) or for those showing first symptoms. Participants can either be selected by screening questionnaires or by self-selection. In a second step, PROTECT was adapted for adolescent patients suffering from full-syndrome Internet use disorders (in the following called PROTECT+) and extended for adolescents between 18 and 25 years.

5.2 Indication

The PROTECT intervention is suited for all adolescents with a high use of the Internet and video games who are at risk for developing Internet use disorders or who already show first symptoms. First signs of a comorbid psychiatric disorder accompanying the excessive Internet or video gaming behavior need to be examined by a trained clinician before the intervention. If needed, an appropriate individual or group psychotherapy or a medical treatment should be provided apart from the PROTECT training.

5.3 Methods and Techniques

PROTECT uses typical cognitive behavioral therapy interventions such as cognitive restructuring, behavior activation, problem-solving training, and sensory, imaginary, as well as cognitive techniques for emotion regulation. In the first three modules,

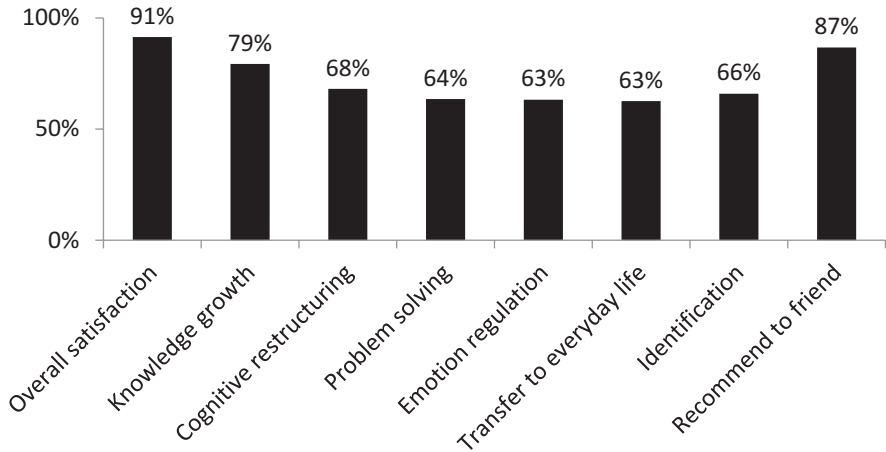


Fig. 5.1 Acceptance and User Satisfaction with PROTECT

Note. The figure displays the proportions of agreement (fully agree or agree) to the questions concerning overall satisfaction, improvement in cognitive restructuring, improvement in problem solving, improvement in emotion regulation, usefulness for everyday life, identification with the case examples, and recommendation to a friend

typical problems that adolescents face are illustrated in rational-emotive stories case examples. This approach facilitates a low-threshold approach (Allen & Fonagy, 2009; Waters & Schwartz, 2003).

In accordance with the underlying etiology model (see Chap. 3: Etiology of Internet Use Disorders), the PROTECT intervention is based on the assumption that Internet use disorders are associated with reduced motivation, procrastination, social anxiety, performance anxiety, and dysfunctional emotion regulation. These risk factors form the basis of the four modules: (1) boredom and motivational problems, (2) procrastination and performance anxiety, (3) social anxiety and friendship, and (4) emotion regulation.

5.3.1 Cognitive Interventions

PROTECT is based on a cognitive behavioral model which assumes that negative emotions are caused by a negative cognitive style and by cognitive biases such as overgeneralization, catastrophizing, and demandingness (Beck & Weishaar, 2013; Schlarb, 2012; Stavemann, 2002; Stavemann, 2005). This model is conveyed in the psycho-educative part of the training. At the age of 12, adolescents have the ability to think hypothetically and to label negative cognitions, attitudes, or expectations which are responsible for emotional problems (Stavemann, 2010).

The cognitive behavioral model highlights the connection between cognitive distortions and negative emotions (Beck & Weishaar, 2013) and assumes that it is not

the activating event (A) itself, but the beliefs (B) about this event that cause negative emotional consequences (C).

For example:

A: David hears that he has to write a math test in several days.

B: David thinks, “I will fail at math,” “I am a total loser.”

C: fear, panic.

When David starts playing video games instead of studying for his test, he avoids the negative emotions of fear and panic and experiences pleasant emotions instead. When David feels sick, stays at home the next day, and avoids the math test as a whole, this further reinforces his negative self-concept concerning math. Furthermore, his deficit in math will increase so that he fears the next test even more. In contrast, the positive experience of self-efficacy and control that he has while gaming further heightens the appeal of the video game.

In the PROTECT training, the cognitive behavioral model is elaborated in each session in order to demonstrate how short-term gratifications, i.e. positive consequences of the Internet activity such as distraction, pleasure, or joy end up in a vicious Circle which is pertained by operant conditioning and can lead to harmful effects. The starting point for change does not lie in sanctioning the gaming behavior or Internet activity, but rather in modifying the dysfunctional beliefs and behaviors in real life. In order to do so, typical negative thoughts are identified in the rational-emotive stories and disputed in a Socratic dialog (Stavemann, 2002). Their truth and usefulness is scrutinized in an empirical (“How likely is it?”), logical (“Is there any proof?”), normative (“Do others feel the same?”), functional (“Is it in line with my goal?”), and hedonistic (“Does it increase my well-being?”) dispute. In a next step, alternative and more helpful cognitions are explored. This technique is called “reality check” in PROTECT. Moreover, the case examples are used to illustrate the powerful effects of rewarding activities on mood on the one hand and on the negative effects of a loss of real-world reinforcement on the other hand. As a countermeasure, behavior activation and problem solving is trained in each session. This technique is called “change plan” in PROTECT.

5.3.2 Problem Solving and Behavior Activation

Behavioral interventions include the improvement of problem-solving skills, behavior activation, training of functional behavior, and contingency management. In problem-solving trainings, a structured sequence of actions is defined in order to solve specific problems (Beyer, 2006). They aim to generalize the structured sequence of behaviors to other problems. Typically, these steps include (1) a phase of orientation in which the problem is defined and alternative solutions are gathered (“generate solutions”), (2) an evaluation of these alternatives (“evaluate solutions”), (3) a decision for one of them (“pick a solution”), and (4) a phase of acting or trying out and evaluating the results (“implementation”). This technique is used to activate rewarding behaviors in real life which can be applied to various domains such as

physical activities, social activities, experiences of success, service activities, or nature. Activities in these domains have been found to be of tremendous importance to enhance mood (Rohde, Brière, & Stice, 2018).

5.3.3 *Emotion Regulation*

Besides psychoeducation, cognitive and behavioral elements, PROTECT uses sensory methods (progressive muscle relaxation), imaginative, and mindfulness-based methods aiming to improve psychophysiological emotion regulation. These have already been positively evaluated in combination with cognitive behavioral therapy in many other fields such as anxiety disorders, depression, chronic pain, or ADHD (Petermann & Pätel, 2009).

5.4 Evaluation

The PROTECT intervention was scientifically evaluated in 2 registered clinical studies.

5.4.1 *The PROTECT Efficacy Study*

The PROTECT intervention was evaluated as an indicated prevention program between 2015 and 2018 in a randomized controlled trial in a school setting (ClinicalTrials.gov: NCT02907658). Four hundred and eighty participants from 34 schools participated in the study. Adolescents in the intervention group were interrogated immediately before and after the intervention as well as 4 months and 12 months after the intervention. Control group participants were only assessed (identical assessment schedule) without receiving the intervention. Demographic data, symptoms of Internet use disorders, and numerous variables assessing comorbid psychopathology were assessed over 12 months (Lindenberg, 2018). Results show a significantly stronger reduction of key Internet use disorders symptoms over 12 months in the intervention group as compared to the control group. The amount of symptom reduction was predicted by the severity of baseline symptoms (Lindenberg, 2018). Beyond effectiveness, user satisfaction, feasibility, and acceptance were assessed. Specifically, PROTECT participants were asked to evaluate their satisfaction with the training, their gain in knowledge and skills, and the usefulness of specific skills (skills in cognitive restructuring, problem solving, and emotion regulation) for everyday life (see Fig. 5.1). The overall satisfaction with the training (91%) was very high, and 87% would recommend PROTECT to a friend.

5.4.2 The PROTECT+ Study

The PROTECT intervention has also been conducted and evaluated as a treatment program for adolescents in a group therapy setting, called PROTECT+ (ClinicalTrials.gov: NCT03582839). Accordingly, PROTECT+ was offered in an outpatient setting (vs. school-based intervention) and extended by 10 min per session in order to enlarge upon the individual needs of the participants. Moreover, PROTECT+ differed in its (sub-) clinical target group (vs. high risk adolescents). Short-term and long-term treatment effects showed a significant reduction in Internet use disorders symptom severity (Szász-Janocha, Vonderlin, & Lindenberg, [submitted](#); Szász-Janocha, Vonderlin, & Lindenberg, 2019). Long-term effect sizes at 12-months follow-up were medium to large measured by self-reports as well as parental reports (Szász-Janocha et al., [submitted](#)).

5.5 Conclusion

The PROTECT intervention is an evidence-based approach which has been shown to significantly reduce symptoms of Internet use disorders over 12 months in two independent studies. It uses psychoeducation, cognitive interventions, behavioral interventions, and emotion regulation interventions to address individuals suffering from full-syndrome or subthreshold Internet use disorders. PROTECT was highly accepted and feasible in schools and the user satisfaction was high.

The PROTECT intervention will be described in detail in the following chapters as user-friendly manual.

References

- Allen, J. G., & Fonagy, P. (Eds.). (2009). *Mentalisierungsgestützte Therapie: Das MBT-Handbuch - Konzepte und Praxis*. Stuttgart, Germany: Klett-Cotta.
- Beck, A. T., & Weishaar, M. (2013). Cognitive therapy. In A. Freeman, K. M. Simon, L. E. Beutler, & H. Arkowitz (Eds.), *Comprehensive handbook of cognitive therapy* (pp. 21–36). Boston, MA: Springer. https://doi.org/10.1007/978-1-4757-9779-4_2.
- Beyer, A. (2006). *Stressbewältigung im Jugendalter: Ein Trainingsprogramm. Therapeutische Praxis*. Göttingen, Germany: Hogrefe.
- Lindenberg, K. (2018). 12-Monats-Effekte der PROTECT Studie: Wirksamkeit eines kognitiv-verhaltenstherapeutischen Trainings zur indizierten Prävention von Internetbezogenen Störungen. *SUCHT*, 64(S1), 78–79.
- Petermann, U., & Pätel, J. (2009). Entspannungsverfahren. In: Silvia Schneider und Jürgen Margraf (Hg.): *Lehrbuch der Verhaltenstherapie*. Band 3: Störungen im Kindes- und Jugendalter. Heidelberg: Springer Medizin Verlag, S. 243–254.
- Rohde, P., Brière, F. N., & Stice, E. (2018). Major depression prevention effects for a cognitive-behavioral adolescent indicated prevention group intervention across four trials. *Behaviour Research and Therapy*, 100, 1–6. <https://doi.org/10.1016/j.brat.2017.10.013>.

- Schlarb, A. A. (Ed.). (2012). *Praxisbuch KVT mit Kindern und Jugendlichen: Störungsspezifische Strategien und Leitfäden; mit Online-Materialien* (1. Aufl.). Weinheim, Germany: Beltz.
- Stavemann, H. H. (2005). *KVT-Praxis: Strategien und Leitfäden für die kognitive Verhaltenstherapie*. Weinheim, Germany: Beltz.
- Stavemann, H. H. (2002). *Sokratische Gesprächsführung in Therapie und Beratung: Eine Anleitung für Psychotherapeuten, Berater und Seelsorger* (1. Aufl.). Weinheim, Germany: Beltz.
- Stavemann, H. H. (2010). *Im Gefühlsdschungel: Emotionale Krisen verstehen und bewältigen* (2., vollst überarb. Aufl.). Weinheim, Germany: Beltz.
- Szász-Janocha, C., Vonderlin, E., & Lindenberg, K. (2019). Die Wirksamkeit eines Frühinterventionsprogramms für Jugendliche mit Computerspiel- und Internetabhängigkeit: Mittelfristige Effekte der PROTECT+ Studie. *Zeitschrift für Kinder- und Jugendpsychiatrie und Psychotherapie*, 48, 1–12. <https://doi.org/10.1024/1422-4917/a000673>.
- Szász-Janocha, C., Vonderlin, E., & Lindenberg, K. (submitted). Treatment outcomes of a CBT-based group intervention for adolescents with Internet use disorders.
- Waters, V., & Schwartz, D. (2003). *Fritzchen Flunder und Nora Nachtigall: Sechs rational-emotive Geschichten zum Nachdenken für Kinder; mit Kommentaren und Interpretationshilfen für Eltern und Erzieher; aus dem Englischen übersetzt, für die deutsche Ausgabe überarbeitet und mit zahlreichen Ergänzungen versehen* (1. Aufl.). Aus dem Programm Huber: Psychologie-Sachbuch. Bern, Switzerland: Huber.

Part II
The PROTECT Program for Evidence-
Based Prevention and Treatment

Chapter 6

Module 1: Boredom and Motivational Problems



6.1 Session Procedure

Introduction (10 min):

- Welcoming, Familiarization, Session Goals and Group Rules

Psychoeducation (35 min):

- Pros and Cons of Internet Usage
- Keeping Balance
- Case Example: “Toni is Bored”
- Toni’s Vicious Circle

Metaphorical Leading Figure (5 min):

- The Chameleon as the Metaphorical Leading Figure

Cognitive Restructuring (15 min):

- Toni’s Reality Check

Problem-Solving Skills and Behavior Activation Training (Change Plan) (15 min):

- Toni’s Change Plan

Homework and Conclusion (10 min):

- My Change Plan Against Boredom
- Conclusion

6.2 Material (Available Online)

- Worksheet (WS) 0.1: Cover Page for the “PROTECT” Portfolio
- Worksheet (WS) 0.2: Overview of all Modules
- Worksheet (WS) 0.3: Group Rules
- Worksheet (WS) 0.4: Shhh...Top Secret!
- Worksheet (WS) 1.1: Case Example “Toni is Bored”
- Worksheet (WS) 1.2: Toni’s Vicious Circle
- Worksheet (WS) 1.3: Toni’s Reality Check
- Worksheet (WS) 1.4: Toni’s Change Plan
- Worksheet (WS) 1.5: My Change Plan Against Boredom
- Trainer Sheet (TS) 1.0: Pros and Cons (Solutions)
- Trainer Sheet (TS) 1.1: Keeping Balance
- Trainer Sheet (TS) 1.2: The Chameleon
- Trainer Sheet (TS) 1.3: Reality Check
- Trainer Sheet (TS) 1.4: Toni’s Reality Check (Solutions)
- Trainer Sheet (TS) 1.5: Thought Stopping
- Trainer Sheet (TS) 1.6: Change Plan
- Trainer Sheet (TS) 1.7: Toni’s Change Plan (Solutions)

6.3 Welcome, Group Rules, and Session Goals

6.3.1 Introduction

First, the participants (Ps) are greeted. The trainers and the Ps briefly introduce themselves. The procedure and goals of the PROTECT training are explained. All Ps receive a portfolio to collect the worksheets (WS) in. This portfolio is to be brought to every session. When handed out, the portfolios already contain the PROTECT cover page (*WS 0.1*), as well as an information sheet (*WS 0.2*) with an overview of the dates and content of all four modules. The entire training is designed interactively and takes place in small groups. Each group consists of 4–10 adolescents. PROTECT is designed for students from 12 years of age, guaranteeing that the cognitive behavioral techniques are didactically conveyed in a way that is understandable and applicable for the Ps.

Welcome

“During the next 4 weeks, we will address the subject of Internet and gaming addiction. It is our goal to learn a professional and self-determined use of video games and the Internet.”

[Optional; in addition: “You have been chosen for this prevention program because the questionnaire you filled out a few weeks ago indicated that you spend a relatively high amount of your free time on the Internet.”]

“With your help, we would like to take the next 4 weeks to find out which thoughts, unpleasant feelings and behaviors can lead to a harmful use of the Internet, and which thoughts, feelings and behaviors can be helpful to attain a more suitable use of computers and the Internet. It is important to practice a healthy consumption of the Internet so that you can continue to enjoy it.”

6.3.2 *Group Rules*

At the beginning of the first module, the group rules are established with all Ps. These rules should ensure a respectful and trustworthy interaction in the group. These rules are collected in a group with all Ps and noted down on the blackboard or a flip chart.

Group Rules

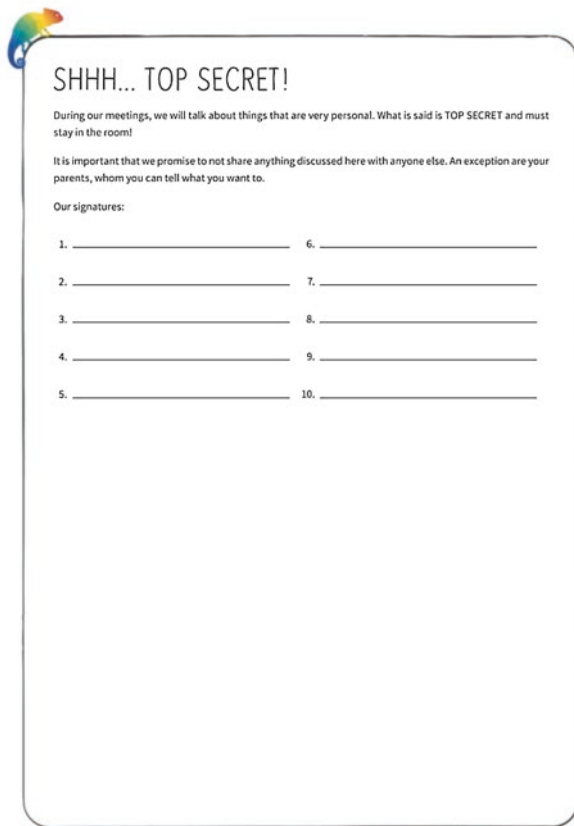
- We let each other finish our sentences.
- Only one person speaks at a time.
- Everybody is taken seriously.
- We treat each other respectfully.
- Mobile phones are turned off during the session.
- We begin our sessions on time.

Ps should write down these rules on their worksheet (*WS 0.3*) which should be filed into their portfolio. To ensure that all conversations in the group are kept confidential, Ps are asked to sign a non-disclosure agreement (*WS 0.4*). By signing this agreement, they promise to not disclose any private information that was discussed during the sessions. The agreement should be read out loud by one P and signed by all Ps. Then, the trainer should copy the worksheet and hand out a copy to all Ps (Fig. 6.1).

6.4 Psychoeducation for Boredom and Internet Use Disorders

6.4.1 *Pros and Cons*

In this exercise, the pros and cons of the real and virtual world are established interactively. The following example demonstrates how this can be achieved: The Ps stand in a circle and toss a ball from one person to the next. Whoever catches the ball should share a pro or a con, which is to be written down on a blackboard or flip



SHHH... TOP SECRET!

During our meetings, we will talk about things that are very personal. What is said is TOP SECRET and must stay in the room!

It is important that we promise to not share anything discussed here with anyone else. An exception are your parents, whom you can tell what you want to.

Our signatures:

1. _____	6. _____
2. _____	7. _____
3. _____	8. _____
4. _____	9. _____
5. _____	10. _____

Fig. 6.1 Confidentiality Agreement (WS 0.4)

chart. To get started, the trainers can give an example for a pro or con from both the real and virtual world. A possible blackboard design can be seen in Fig. 6.2.

Pro and Con Exercise

“On the one hand, the virtual world can be quite distracting. On the other hand, it is also very entertaining to be online or play video games. What do you like best about the Internet? What do you not like, and do you see risks? Which differences are there between the virtual and the real world? Let’s gather pro- and con-arguments for the real and for the virtual world!”

Figure 6.2 lists possible pros and cons of the real and the virtual world. Additional points can be added by the trainer as well as by the Ps. It is advised to take a picture of the notes on the blackboard after the exercise, so that a copy can be given to the Ps to file in their portfolios.



PROS AND CONS

PROS OF THE "REAL WORLD"	PROS OF THE "VIRTUAL WORLD"
• Direct social interaction • Experiencing the world with "all senses" • Eye contact • Being able to see others' facial expression and gestures • Hearing someone's voice • Real friends and real relationships • Physical activity and fitness • Development of social competences • Experiencing physical limits • Success at school • Successful graduation • Strong bond with family • Cliques and circles of friends • Outdoor activities e.g. going for a walk • Hobbies • Making music or listening to it together • Being active artistically • Reading • Nature, garden, animals	• Entertainment • Being distracted from problems • Airbrushed self-portrayal from which I gain acknowledgement • Fast and easy successes • Effortless activity • Recurring reinforcement • Easy availability and marginal financial burden • Infinity (e.g. concerning "friends", information etc.) • Extended spacial experience • Compacted experience of time, "flow"-experience (pro/con) • Anonymity • Safe social distance and intimate bonds • Fast and noncommittal contacts • Strong experience of control • Communication over distances • Easy way to interact with people who have similar interests • Relevance in professional world
CONS "REAL WORLD"	CONS "VIRTUAL WORLD"
• Uncomfortable activities e.g. homework • Uncomfortable situations e.g. during social interaction • Uncomfortable emotions e.g. feeling ashamed • Failure • Boredom • Low motivation • Low endurance • Nothing interests me • Nobody notices me • Being rejected or disappointment • I am shy • I'm too afraid • Few friends • Little ability to control surroundings • Few successes • Little influence	• Social withdrawal and isolation, loneliness • (Self-) Neglect • Feelings of guilt and shame • Internet determines your life • Spacial boundaries through internet availability • Activity deficit • Unmanageably large and unsorted flood of information • Communication limited by restricted system of symbols • Misinterpretation of messages • Limited opportunities to develop own abilities and competencies • Dropping out of school • Consumes too much time • Addictive

Fig. 6.2 Possible Solutions for Pros and Cons of the Real and the Virtual World (TS 1.0)

The goal of this exercise is to gain knowledge about the advantages and disadvantages of the Internet. This exercise focuses on the fact that using the Internet is not necessarily harmful in itself. Instead, it has various positive as well as negative consequences that result from it. This knowledge is essential for the exercises that follow.

6.4.2 Keeping Balance

The exercise “Keeping Balance” uses a pair of scales to visualize the purpose and influence of the virtual world on everyday life. The difference between a balanced and an imbalanced pair of scales symbolizes the dysfunctional Internet use. For this exercise, the trainer sheet “Keeping Balance” (*TS 1.1*) (Fig. 6.3) is to be pinned on the blackboard. With the help of Toni’s case example, the Ps work out negative consequences of excessive Internet use. Additionally, Toni’s case helps Ps understand at what point the Internet causes negative consequences. The worksheet with the case example “Toni is Bored” (*WS 1.1*) should be distributed now (Fig. 6.4).

Keeping Balance (TS 1.1)

You just worked out many advantages and disadvantages of the real and the virtual world. Now I would like you to picture a scale. The real world is on the left-hand side, and the virtual world is on the right-hand side. As long as these two worlds are well balanced, we can switch between both worlds without trouble—just like a little manikin balancing over the beam of the scales. If the scales tip and the virtual world overbalances, however, we have problems in the real world. Then, it will get harder and harder to restore balance.

Next, we will read a story about Toni’s experience with the Internet and video games. As soon as I have passed around the worksheets, we will read the passage together. While reading, please judge whether Toni’s scales are still in balance.



Fig. 6.3 Keeping Balance (TS 1.1)



CASE EXAMPLE "TONI IS BORED"

"And once again I have nothing to do", Toni sighs in a bored voice. He has just come home from school. He hurts his backpack and jacket into the corner and sinks down on the sofa. What should he do all afternoon? "I have to do something really cool, otherwise I'll be bored again", Toni says.

"Toni, come and have lunch!", his mother calls. But Toni doesn't hear her as he passes by the kitchen. He is completely absorbed by his smartphone and sees that he has 58 new messages! "Probably the class group chat", thinks Toni. He immediately starts responding to the last message without even having read the previous ones. As soon as he closed the app, he receives two more messages. "I definitely have to read them before I have lunch- otherwise I won't know what the others are doing, will I? Mum, you have to bring my food to the couch. I have to text back first. This is very important!" Toni scrolls through his messages and immediately checks the news afterwards. That's what Toni always does. He opens the different apps automatically, without even having to think about what he is doing.

His mother comes to the couch with his full plate and warns him: "This is the last time I'm bringing you your lunch. Also, you haven't cleaned up your room in a very long time", she continues to nag. Tony is completely immersed in his smartphone and barely hears anything she's saying. "Yeah, yeah...", he mumbles, while thinking about what he should post next. "Whoohooah, Noah posted pictures from mountain biking yesterday evening. I have to look at them right away! I bet mountain biking is a lot of fun", Toni marvels and begins to daydream.

Maybe he should try that too! After all, his brother's old bike is still in the cellar, and he would only have to repair it. But my mountain bike has to look cool, otherwise it won't be any fun. That's why I definitely need a new mountain bike. If not, that would just be really uncool."

At that moment, Toni looks at his phone to see some

new posts, and his thoughts about mountain biking have vanished completely.

"I absolutely have to look at the newest posts, otherwise I will miss everything! After all, I have to be able to join in on the conversations tomorrow!" Click! He lands on Diego's profile page. "Oh, a photo of the entire soccer team! And the line-up for the game on Saturday! Adrian is tagged in it, too!", Toni notices. "Maybe I should also play soccer? I've actually wanted to have a look at their soccer practice for a long time, but I've always had other things to do." Disappointed and slightly annoyed with himself, Toni realizes that Diego and Adrian haven't asked him to come to practice for a while now. "Whatever! Soccer players have to be extremely fit anyway, otherwise it's really embarrassing." Toni pulls his cuddly blanket up to his chin. "Well, it's obvious I will never become a Ronaldo, and it's not as relaxing as playing computer games anyway."

Toni never had to put a lot of effort into being a good gamer. It comes to him so easily. His favorite are games with elaborate graphics and good sound. Still wrapped in his blanket, Toni shuffles into his room and turns on his computer. He recently discovered a new strategy game. "I have to practice it every day, or I will never become as good as the others!"

Indeed, his scores get higher from day to day, even though the game is very difficult! This fills him with joyful anticipation and increases his motivation to continue playing. "That's what I call entertainment!", he rejoices. Sometimes he even plays until late at night, as he often has trouble falling asleep anyway.

Just as he finished booting the computer he happens to look at the calendar on his wall. "What? It's already February 24th?" Toni is shocked. After all, it was his best friend Benjamin's birthday last week. Hadn't he planned to throw a party? "Darn, I totally forgot about that!", thinks Toni.

Fig. 6.4 Extract from WS 1.1—"Toni is Bored"

Trainer Instructions We recommend splitting a large blackboard into three sections. During psychoeducation, continually add information on Internet use disorder and boredom on the panel. After the exercises, the blackboards can be used to refresh the Ps memory.

6.4.3 Case Example “Toni is Bored”

After all Ps have read the story “Toni is Bored” (WS 1.1; Fig. 6.4), the group should discuss whether Toni’s pair of scales is still in balance.

The goal of this exercise is to identify, evaluate, and categorize the functional and dysfunctional cognitions and behaviors that are typical for people affected by Internet use disorder. This is achieved with the help of a fictional story. Furthermore, the Ps learn to identify their own possible dysfunctional cognitions, so-called errors in reasoning.

“And once again I have nothing to do,” Toni sighs in a bored voice. He has just come home from school. He hurls his backpack and jacket into the corner and sinks down on the sofa. What should he do all afternoon? “I have to do something really cool, otherwise I’ll be bored again,” Toni says.

“Toni, come and have lunch!” his mother calls. But Toni doesn’t hear her as he passes by the kitchen. He is completely absorbed by his smartphone and sees that he has 58 new messages! “Probably the class group chat,” thinks Toni. He immediately starts responding to the last message without even having read the previous ones. As soon as he closed the app, he receives two more messages. “I definitely have to read them before I have lunch—otherwise I won’t know what the others are doing, will I? Mum, you have to bring my food to the couch. I have to text back first. This is very important!” Toni scrolls through his messages and immediately checks the news afterwards. That’s what Toni always does. He opens the different apps automatically, without even having to think about what he is doing.

His mother comes to the couch with his full plate and warns him: “This is the last time I’m bringing you your lunch. Also, you haven’t cleaned up your room in a very long time,” she continues to nag. Toni is completely immersed in his smartphone and barely hears anything she’s saying. “Yeah, yeah...,” he mumbles, while thinking about what he should post next. “Whoooah, Noah posted pictures from mountain biking yesterday evening. I have to look at them right away! I bet mountain biking is a lot of fun,” Toni marvels and begins to daydream. Maybe he should try that too! After all, his brother’s old bike is still in the cellar, and he would only have to repair it, “...But my moun-

tain bike has to look cool, otherwise it won't be any fun. That's why I definitely need a new mountain bike. If not, that would just be really uncool."

At that moment, Toni looks at his phone to see some new posts, and his thoughts about mountain biking have vanished completely.

"I absolutely have to look at the newest posts, otherwise I will miss everything! After all, I have to be able to join in on the conversations tomorrow!"

Click! He lands on Diego's profile page. "Oh, a photo of the entire soccer team! And the line-up for the game on Saturday! Adrian is tagged in it, too!"

Toni notices. "Maybe I should also play soccer? I've actually wanted to have a look at their soccer practice for a long time, but I've always had other things to do." Disappointed and slightly annoyed with himself, Toni realizes that Diego and Adrian haven't asked him to come to practice for a while now.

"Whatever! Soccer players have to be extremely fit anyway, otherwise it's really embarrassing." Toni pulls his cuddly blanket up to his chin. "Well, it's obvious I will never become a Ronaldo, and it's not as relaxing as playing video games anyway."

Toni never had to put a lot of effort into being a good gamer. It comes to him so easily. His favorite are games with elaborate graphics and good sound. Still wrapped in his blanket, Toni shuffles into his room and turns on his computer. He recently discovered a new strategy game. "I have to practice it every day, or I will never become as good as the others!"

Indeed, his scores get higher from day to day, even though the game is very difficult! This fills him with joyful anticipation and increases his motivation to continue playing. "That's what I call entertainment!" he rejoices. Sometimes he even plays until late at night, as he often has trouble falling asleep anyway.

Just as he finished booting the computer, he happens to look at the calendar on his wall. "What? It's already February 24th?" Toni is shocked. After all, it was his best friend Benjamin's birthday last week. Hadn't he planned to throw a party? "Darn, I totally forgot about that!" thinks Toni.

6.4.4 *Vicious Circle*

The vicious circle is used to analyze the development and persistence of Toni's excessive Internet use. For this, the worksheet "Toni's Vicious Circle" (WS 1.2; Fig. 6.5) is handed out to all Ps. Now it is the Ps turn to consider which negative feelings cause Toni to spend so much time on the Internet. Furthermore, they should consider which positive feelings Toni experiences after having used the Internet or having played computer games. Finally, the long-term negative consequences of Toni's excessive Internet use are discussed. It is explained that the Internet serves as a short-term strategy to regulate the unpleasant emotions caused by these negative consequences. In accordance with WS 1.2, Toni's Vicious Circle is to be drawn

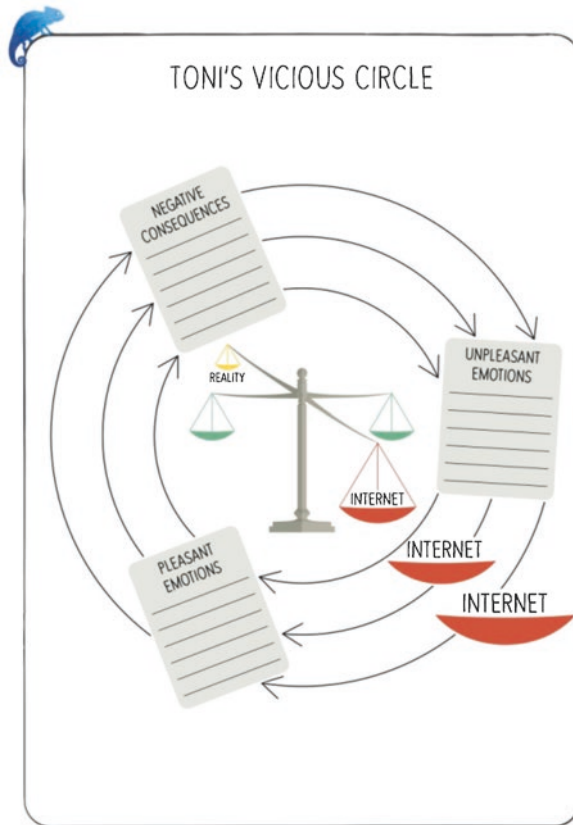


Fig. 6.5 Toni's Vicious Circle (WS 1.2)

around the pair of scales which is pinned to the blackboard. The Ps' ideas should be discussed in the group and written in the vicious circle.

Vicious Circle of Boredom

Trainer: "Is Toni's beam scale still well balanced?"

Possible answer: "Toni's scales have become unbalanced."

Trainer: "Now, let's have a look at how Toni got caught in this vicious circle of boredom and extreme Internet usage. While doing so, let's have a particularly close look at his pleasant and unpleasant feelings in the real and the virtual world and his resulting behavior. We will gather your ideas on the blackboard together. Please copy them down onto your worksheet. How does Toni feel when he is online?"

Possible answer: "He has fun and he isn't bored."

Trainer: "Does he have problems because of the Internet?"

Possible answer: “His mother is angry at him, he misses his best friend’s party and he no longer gets asked whether he wants to come along to soccer practice.”

Trainer: “How do those things make him feel?”

Possible answer: “Toni feels disappointed, annoyed, and sad.”

Trainer: “What do you think: What will Toni do to get rid of these unpleasant feelings?”

Possible answer: “He will probably spend a lot of time on the Internet in order to repress his unpleasant feelings.”

Trainer: “Toni’s real life is associated with unpleasant feelings and thoughts. He spends most of his free time online and neglects everyday activities like school, chores around the house, and meeting his friends. When he is on the Internet, he is distracted and forgets his boredom. In real everyday-life, he often feels dull, weak, and tired. He is not very close with his friends and dawdles away his time. The Internet consumes quite a lot of it, which causes him to miss a lot of things in his life. These negative consequences make him feel down and they cause bad feelings. Again, he tries to combat his boredom by going online. However, his indifference and his lethargy in everyday-life remain. You can see that the pleasant feelings caused by the Internet are only short-lived, whilst the long-term negative consequences and feelings in real life stay and even get worse with time.”

The vicious circle conveys that Internet usage is an easily accessible strategy to avoid unpleasant emotional states such as boredom and disinterest. The Internet usage generates short-term positive feelings but does not solve problems in the long run. In fact, it leads to even more negative consequences. Especially when this process becomes automated, alternative coping strategies become unlikely.

The next step is to take a detailed look at the specific situation that provoked Toni’s excessive Internet use. The focus lies on his lethargy and motivational problems that are repressed by going online. However, this effect is only short term. Together with the trainer, the Ps establish how boredom, motivation, and interest are connected and how interest can be promoted in everyday situations.

Breaking the Vicious Circle: Encouragement of Interests (Additional Information for WS 1.2)

“Every person has phases in life in which they are bored, or they can’t motivate themselves to do anything. Who here has experienced this before? New interests develop when you intensively occupy yourself with something you are interested in. The more you get to know an activity and try it out, the more fun you have doing it. Eventually, you can say that an activity has become a hobby.”

Examples for Answers Concerning Toni's Vicious Circle (WS 1.2; Fig. 6.5)

- *Pleasant feelings caused by Internet activity:* fun, distraction, entertainment, happiness, pleasure, flow, interest, experienced control, and success.
- *Negative consequences:* dawdled away the time, trouble with mother, missed the party, is no longer asked whether he would like to come along to soccer practice, lethargy increases, little motivation to try new things, less contact with friends/peers and family, insecurity in giving new activities and hobbies a try, self-efficacy, and self-confidence decrease.
- *Unpleasant feelings:* resentment, disappointment, dejection, sadness, dissatisfaction, bad conscience, insecurity, loneliness, annoyance, anger, and aggravation.

6.4.5 Metaphorical Lead Figure: The Chameleon

The chameleon is the central leading figure that will accompany the Ps through the entire intervention and introduces the tricks that are taught. Its properties are used as a metaphor for change. The Ps should share the knowledge they already have about chameleons. Their ideas can be gathered on the blackboard. For this, the trainer sheet “The Chameleon” (TS 1.2; Fig. 6.6) should be hanging up.

The chameleon's three most important properties are its well-regulated body that is capable of adapting its color, its slingshot-like tongue as well as its very movable and long-sighted eyes. These three properties symbolize the techniques that will be conveyed in the following. The primary goal is to learn how dysfunctional thoughts and behaviors can be modified with the help of Toni's case example.

The Chameleon as a Leading Figure

The chameleon is PROTECT's leading figure. It will accompany you in this session as well as in the next three and it will show you many helpful tricks. It possesses special qualities that we can learn a lot from. [With older adolescents: We can understand its special qualities as a metaphor for helpful behaviors.]

Who here knows anything about chameleons? The chameleon's most striking features are its color, tongue; and eyes. The chameleon's body can adapt and change its color depending on the situation. Chameleons can wait and watch for a long time, but they can also act as quickly as lightning and catch prey with their slingshot-like tongues, using enormous amounts of force while doing so.

What would it be like if Toni were able to regulate his lack of motivation the way the chameleon can regulate its color? Just like the chameleon, Toni could transform and overcome his boredom and listlessness by trying new



Fig. 6.6 The Chameleon (TS 1.2)



Fig. 6.7 Symbol for Reality Check (TS 1.3)

things that could interest him. For this to happen, it is crucial that he keeps his eye on different possibilities, gathers them, thinks them through, and then makes a decision and sticks with it. Often, we don't find interest in certain things because we have never even given them a real try. The chameleon will show you a clever change plan for this later.

Did you know that the chameleon has incredible sight? It can even make its gaze wander around 342°, move its eyes independently from one another, and see clearly for one whole kilometer.

What could Toni see if his eyesight were as perfect as the chameleon's? Toni could use his wide gaze to observe and second guess his own thoughts critically. Often, unrealistically negative or pessimistic thoughts (so called "downers") are the reason why we feel bad. Later, the chameleon will show you how to monitor and evaluate your own thoughts carefully with the help of the reality check."

The goal of this exercise is to use the unique properties of the chameleon as metaphors for cognitive behavioral techniques, which will be established and internalized during the next sessions.

6.5 Identifying and Restructuring Unfavorable Cognitions

6.5.1 *Reality Check*

In this part of the module, the Ps learn that cognitions have a considerable impact on our experiences and behaviors. The way an individual evaluates a situation has a strong impact on the emotions that are experienced. With a cognitive behavioral technique (Schlarb, 2012), unfavorable evaluations in the form of negative distortions can be checked for their level of reality. If they do not prove to be realistic, they are to be re-evaluated through cognitive restructuring. The PROTECT training calls this technique the "reality check." The reality check teaches Ps that unfavorable, negative evaluations of situations, so-called errors of reasoning, can lead to negative experiences and feelings, such as frustration, anger, or fear. The PROTECT training introduces errors of reasoning under the term "downers." Errors of reasoning can be found in every age group and are characterized by being unrealistic, illogical, often-times rigid, and leading to unpleasant feelings. There are certain errors of reasoning that are particularly common during adolescence, for example, "must thoughts," also known as "demandingness." They are considered errors in reasoning because they are not maintainable in their extreme form when doing a rational reality check. Once a demandingness thought has been identified as one, it can be corrected quite easily through the process of re-evaluation.

Every module illustratively addresses one dysfunctional pattern of thought that can be found in the protagonist.

Toni's story focuses specifically on the dysfunctional pattern of "demandingness." Must thoughts are unrealistic demands placed upon oneself and others, which no one can fulfill.

Reality Check (TS 1.3; Fig. 6.7 and WS 1.3; Fig. 6.8)

Trainer: "Now, the chameleon will show us a few tricks that help make us feel better again. The first trick is called the reality check. Toni is bored, frustrated, and depressed. Why is Toni feeling this way? Please take a few seconds to think about that."

At this point, the worksheet "Toni's Reality Check" is handed out (WS 1.3) (Fig. 6.8) and the trainer sheet "Reality Check" (TS 1.3) (Fig. 6.7) should be hanging up. On the blackboard, write down three to six examples of Toni's thoughts that contain irrational beliefs. Trainers can use the corresponding trainer sheet with possible solutions.

"Are these thoughts helpful?"

Possible answer: "No, because they make Toni feel bad."

Trainer: "That's why we call these thoughts downers."

Now, the word "downers" is written on the blackboard as a header for the previously gathered negative thoughts.

Toni has many thoughts that make him feel down. These negative thoughts are called downers, because they give him bad feelings. They aren't helpful or productive, and in fact, in most cases, they aren't realistic either. For example, Toni thinks his mountain bike must look cool, and that it won't be fun to ride otherwise. He thinks that it is absolutely necessary to have a new mountain bike because it would be really uncool otherwise. Is that the case? Would you say this idea is realistic?"

Possible answer: "No, that idea is not realistic."

Trainer: "There are a lot of different downers. You can spot them because of the words *must* or *have to*."

(At this point all of the "musts" and "have to's" are to be underlined in each sentence on the blackboard.)

You can identify them because they contain unrealistic demands directed at others and at oneself that oftentimes can't be justified logically. As these demands are unrealistic, they are often impossible to be fulfilled, which leaves you frustrated and depressed. For example, Toni thinks that he can't do anything exciting anyway, because he *must* do something else first, for example reading all of the messages.

Since downers are neither realistic nor helpful, it is important to identify and stop them as soon as possible, before they pull us down any further. Afterwards, we can look for alternative, more helpful thoughts that can cheer us up again".

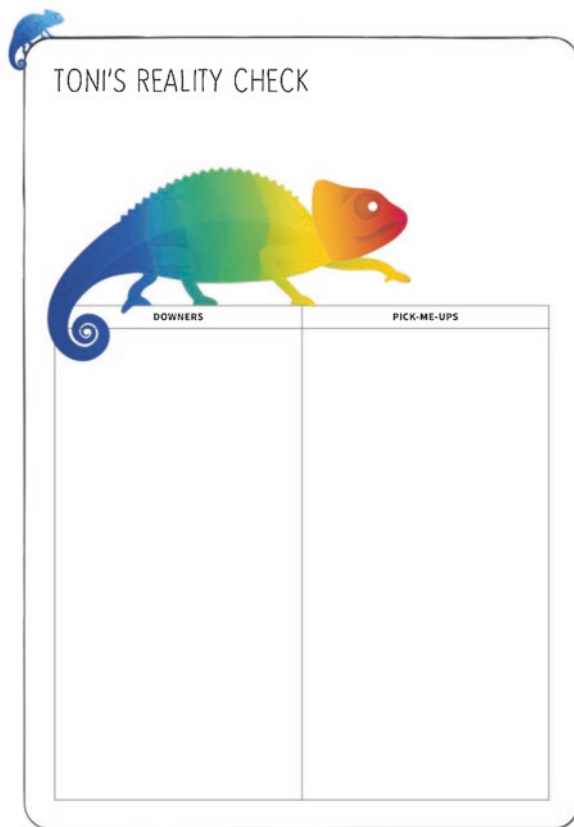


Fig. 6.8 Toni's Reality Check (WS 1.3)

We can stop downers by telling ourselves: Stop—I will not continue thinking like this! These thoughts are unrealistic and only make me feel bad! We call this trick “thought stopping”. We will talk about it in more detail later.

(After the explanation, the stop sign is to be hung to the right of the downers.)

A more helpful and realistic thought would be: It would be nice if I had a cool, new bike, but I'm sure I can have fun with my brother's bike, too.

What are potential alternative thoughts that are more realistic and helpful, and which would make Toni feel better?

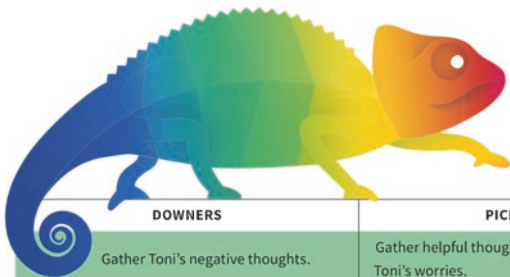
(Now, collect alternative thoughts to the ones already written down with the Ps. It could be helpful if the trainer formulates the first thought as an example. The alternative thoughts are now written down on the blackboard to the right of the stop sign.)

These thoughts are more helpful and cause less bad feelings. They are also more realistic. That's why they are called pick-me-ups.

(At this point, the term “pick-me-ups” is written on the blackboard as a header for the alternative thoughts that have been gathered.)



TONI'S REALITY CHECK



DOWNERS	PICK-ME-UPS
Gather Toni's negative thoughts.	Gather helpful thoughts that could disconfirm Toni's worries.
"I have to do something really cool, otherwise I'll just get bored again."	"It would be nice if I could do something really awesome today, but I can't have that every day. Sometimes the normal everyday stuff needs to be done, too."
"Mum, you have to bring my food to the couch. I still have to text back first. This is important!"	"It would be nice if mum were to bring my food to the couch. But I can just ignore the texts for a short while and come to the table, too. They'll still be there later."
"...but my mountain bike really needs to look cool, or it won't be any fun. That's why I definitely need a new mountain bike, otherwise that would be really uncool."	"It would be cool if I got a really good new mountain bike at some point, but my brother's old bike is absolutely fine for practicing with in the beginning."
"I absolutely have to look at the newest posts, otherwise I will miss everything and after all, I have to be able to join in on the conversations tomorrow!"	"It would be nice if I could still manage to look through all the posts, so I could be up-to-date tomorrow. But if that doesn't work, I will still be able to pick up the important things that were discussed the next day."
"Whatever! Soccer players have to be extremely fit anyway, otherwise it's really embarrassing."	"Being a little sportier would be cool, but it's enough for a bit of recreational soccer in my free time."
"I have to practice it every day, or I will never become as good as the others."	"It would be nice if I had a little more time to practice and improve my skills, but after all, I don't have to prove anything to anyone and other things that are important to me simply also take up a lot of my time."

Fig. 6.9 Toni's Reality Check – Solutions (TS 1.4)

To initiate the reality check exercise, the trainer sheet “Reality Check” (TS 1.3; Fig. 6.7) is pinned to the blackboard. It illustrates the technique of cognitive restructuring, which is included in all four sessions.

Next, Toni's downers are collected in the group and written down on the backboard. The Ps should take notes on the worksheet titled “Toni's Reality Check” (WS 1.3; Fig. 6.8), which is to be handed out. Afterwards, these thoughts are questioned

and checked for their realistic merit. The Ps are meant to realize that downers are distorted and unrealistic thoughts. Thereupon, they are asked to work out alternative, more helpful thoughts that are more realistic and will make Toni feel better.

At the end of the exercise, it is helpful to let the Ps reiterate the “trick” in their own words. The goal of the exercise is that the Ps understand that the evaluation of a situation can vary between individuals and that these evaluations can negatively influence our experience of affect and behavior. Individuals with motivational problems often display harmful thought patterns that are characterized by demandingness, such as: “I have to be the best soccer player or it’s no fun.” The Ps are taught to apply the technique of cognitive restructuring to Toni’s case example. They learn to identify disadvantageous cognitions, check them for their realistic merit, and formulate more helpful alternatives with which Toni can feel less downhearted, uninterested, and bored (TS 1.4; Fig. 6.9).

6.5.2 *Thought Stopping*

The technique of thought stopping constrains dysfunctional thoughts. This cognitive self-control technique brings dysfunctional thoughts to a standstill by means of an imaginary stop sign, which helps one redirect to alternative thoughts, such as pick-me-ups. For the sake of illustration, the trainer should refer to the trainer sheet “Thought Stopping” (TS 1.5) which is to be pinned underneath the downers on the blackboard (Fig. 6.10).

Thought Stopping (TS 1.5; Fig. 6.10)

“Sometimes, thoughts pop up that are so unpleasant that we react to them with intense feelings. This is when thought stopping can help. Just as the name implies, it is meant to stop depressing thoughts in their tracks. Thought stopping is a quick aid to assert yourselves against downers. Simply tell yourself: Stop! I will not continue thinking like this! Yell a loud “Stop!” at your downers, whether it is in real life or just internally. Maybe you can even picture a traffic stop sign that can bring your thoughts to a standstill. Another thing you could do to distance yourself from your thoughts is to tap your hand on the table or slap your leg lightly. After that, quickly occupy yourself with more positive thoughts, such as pick-me-ups, or engage in a pleasant activity.



Fig. 6.10 Symbol for Thought Stopping (TS 1.5)

6.6 Problem-Solving Skills and Behavior Activation Training (Change Plan)

This problem-solving technique (Margraf & Schneider, 2018) targets the behavioral level directly. It teaches Ps how to achieve behavior change with the help of a systematic problem-solving strategy and intrinsic reinforcement. The change plan trains problem-solving skills by self-management, therefore strengthening the Ps' action competence. The trainer sheet "Change Plan" (TS 1.6) should be pinned to the blackboard for the sake of illustration (Fig. 6.11).

The change plan is implemented in two stages. First, Toni's current patterns of behavior are analyzed and evaluated. Together with the Ps, have a closer look at the everyday activities that make Toni bored or stressed, and those that satisfy him. Hand out the worksheet "Toni's Change Plan" (WS 1.4) (Fig. 6.12).

Change Plan: (a) Problem Analysis (WS 1.4; Fig. 6.12 and TS 1.7; Fig. 6.13)

Trainer: "We have spent quite a lot of time addressing Toni's thoughts and feelings. Now, let's have a look at his behavior when he is bored. We want to find out whether there are possible alternatives to this behavior. Which are the situations in which Toni is bored and doesn't feel like doing anything?"

Possible answers: When he

- Comes home from school.
- Realizes that activities take effort and time.
- Realizes that activities require planning and organization.

Trainer: “In which situations is Toni not bored?”
Possible answers: When he

- Is playing computer games.
- Is reading messages from social media.
- Is scrolling through his mobile phone.

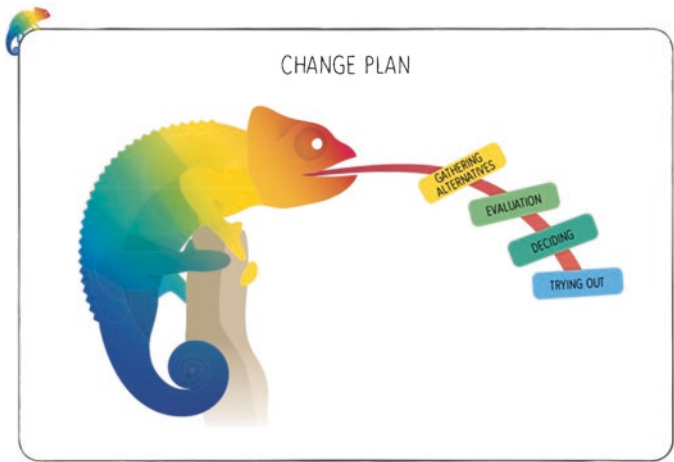


Fig. 6.11 Symbol for Change Plan (TS 1.6)

TONI'S CHANGE PLAN				
GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
Toni's alternatives to using the Internet / playing computer games	Advantages	Disadvantages	Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?

Fig. 6.12 Toni's Change Plan (WS 1.4)

Ps should think of activities Toni could pursue when he is bored instead of playing computer games or surfing the Internet. Collect the Ps ideas on the blackboard. Ps should list four alternatives for Toni in the first column of the table. Possible solutions can be found on the trainer sheet “Toni’s Change Plan” (TS 1.7; Fig. 6.13) (Fig. 6.13).

Afterwards, the advantages and disadvantages of the alternatives are collected on the blackboard. They should be written down in the second and third column of the worksheet. The Ps should make a cross to mark the alternative that they consider to be the best.

Change Plan: (b) Problem-Solving Training (WS 1.4; Fig. 6.12 and TS 1.7; Fig. 6.13)

“In Toni’s vicious circle, we saw that his behavior leads to various problems.

The chameleon can transform and change its color depending on the situation. It can wait and watch for a long time, but it can also move quick as lightning and catch prey with its slingshot-like tongue.

How could Toni transform and try out new things? Let’s think of a clever change plan for Toni to fight his boredom:

Instead of playing computer games all day, what could Toni do instead? Gather ideas and write them down!

What are the advantages and disadvantages of these alternatives? Write them down!

Now it is important to make a decision and try out the alternative.

Your task: Note down four alternative activities that Toni could try to get rid of his boredom and develop new interests.”

Now, Ps are instructed to reflect on their personal behavior when they are bored. What alternative activities do they have to combat their boredom? This task is to be completed individually with the help of the worksheet “My Change Plan Against Boredom” (WS 1.5; Fig. 6.14). Ps should think of three possible alternatives to the Internet and computer games. They should choose one and give it a try until the next session.



GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
Toni's alternatives to using the Internet / playing computer games	Advantages	Disadvantages	Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?
1. Play the guitar	- Ability to play a musical instrument - Possibly shared activity with friends - Admiration from others - Experience of self-competence - Fun - Relaxation	- Must practice for a long time - Discipline - Perseverance	X	
2. Do sports	- Motoric skills - Physical fitness, work off energy - Contact with peers - Experience of self-competence	- Physical strain - Practice times - Laziness		
3. Do volunteer work	- Appreciation - You do something good for others and feel good doing it - Fulfilling	- Can be time consuming - Cannot expect a reward		
4. Have a games night with friends or family	- Fun and entertaining - Having company - Being in contact with "real" people	- Patience - Planning		
5. Painting, drawing, crafting	- Fosters own creativity - Can be done alone or in a group - Relaxation	Perseverance until first results can be seen		

Fig. 6.13 Possible Solutions for Toni's Change Plan (TS 1.7)

My Change Plan Against Boredom (WS 1.5; Fig. 6.14)

"This trick does not only work for Toni, every one of us can use it. What do you do when you are bored? Who here plays computer games or surfs the Internet for hours when this happens? What could you do alternatively to fight your boredom? Let's gather ideas together. Now, create your own change plan. Write down three possible alternatives in your change plan, evaluate them, and decide on one alternative that you want to try out until next week. Think of a reward you can give yourself after you have put your change plan into practice. We are eager to hear about how you managed next time.

The change plan shows Ps that it is possible to change their behavior. Children and adolescents with motivational problems often have low levels of perseverance. This change plan allows the Ps to acquire problem-solving skills and teaches them to generate and evaluate alternative behaviors. Thereby, it is essential that the alternative is correctly executed and evaluated. This will be explained further in the next session.



MY CHANGE PLAN AGAINST BOREDOM

GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
My alternatives to using the Internet / playing computer games	Advantages	Disadvantages	Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?

Fig. 6.14 My Change Plan against Boredom (WS 1.5)

6.7 Homework and Conclusion

6.7.1 Homework

At the end of the first module, all Ps are given an exercise to complete at home. The Ps should give their chosen action alternative a try and document their experience. If time allows, have each P present the alternative they want to try out (see above).

6.7.2 Conclusion

In a flashlight exercise, each P should answer the following questions in one sentence:

What do I take home from this session? How has my view of Internet use and video games changed? How will I implement my change plan this week?

Finally, the trainer dismisses the group.

References

- Margraf, J., & Schneider, S. (2018). *Lehrbuch der Verhaltenstherapie, Band 1: Grundlagen, Diagnostik, Verfahren und Rahmenbedingungen psychologischer Therapie*. Berlin: Springer.
- Schlarb, A. A. (Ed.). (2012). *Praxisbuch KVT mit Kindern und Jugendlichen: Störungsspezifische Strategien und Leitfäden; mit Online-Materialien* (1. Aufl.). Weinheim: Beltz.

Chapter 7

Module 2: Performance Anxiety and Procrastination



7.1 Session Procedure

Homework Evaluation (10 min):

- My Change Plan Against Boredom

Psychoeducation (35 min):

- Keeping Balance
- Case Example: “David Has the Jitters”
- David’s Vicious Circle

Cognitive Restructuring (20 min):

- David’s Reality Check

Problem-Solving Training for Performance Anxiety and Procrastination (15 min):

- David’s Change Plan

Homework and Conclusion (10 min):

- My Change Plan Against Performance Anxiety
- My Reality Check
- Conclusion

7.2 Material (Available Online)

- Worksheet (WS) 2.1: Case Example “David Has the Jitters”
- Worksheet (WS) 2.2: David’s Vicious Circle
- Worksheet (WS) 2.3: David’s Reality Check
- Worksheet (WS) 2.4: David’s Change Plan

- Worksheet (WS) 2.5: My Change Plan Against Performance Anxiety
- Worksheet (WS) 2.6: My Reality Check
- From Module 1: Trainer Sheet (TS) 1.1: Keeping Balance
- From Module 1: Trainer Sheet (TS) 1.2: The Chameleon
- From Module 1: Trainer Sheet (TS) 1.3: Reality Check
- From Module 1: Trainer Sheet (TS) 1.5: Thought Stopping
- From Module 1: Trainer Sheet (TS) 1.6: Change Plan
- Trainer Sheet (TS) 2.1: David's Reality Check (Solutions)
- Trainer Sheet (TS) 2.2: David's Change Plan (Solutions)

7.3 Welcome, Revision, Homework, and Session Goals

The Ps are welcomed, the previous session is briefly revised, and the homework is discussed. The grid in Fig. 7.1 provides a helpful instrument to evaluate whether the individual change plan was successful. It can be used as an orientation to check the homework assignment “My Change Plan Against Boredom.” Afterwards, the procedure and goals of the current session are presented.

Welcome and Checking Homework

You've already learned a lot in the last lesson. We began by looking at the advantages and the disadvantages of the real and the virtual world. Then, we talked about the chameleon and its special qualities. Can somebody tell me what qualities we talked about?

After that, we got to know to Toni. We found out why Toni spends so much time on the computer. Toni goes online to cope with his boredom and listlessness. The Internet allows him to look at interesting content and stay in touch with his friends without having to overcome his laziness. Additionally, we learned about three tricks that Toni can use to escape the vicious circle of excessive Internet use and boredom. Who remembers what these tricks were? They were the reality check, thought stopping and the change plan.

First and foremost, I would like to talk about how you got along with your change plans last week. Did you try out a new activity? How did it work out? Was it fun? Was it hard? Would you choose to do that alternative activity again? Who would like to tell us about their experience?

Today's session will be structured similarly to the last session. You will be introduced to David, who is afraid of an exam and who avoids unpleasant situations and postpones important things. We will apply the tricks we learned in the last session to David.

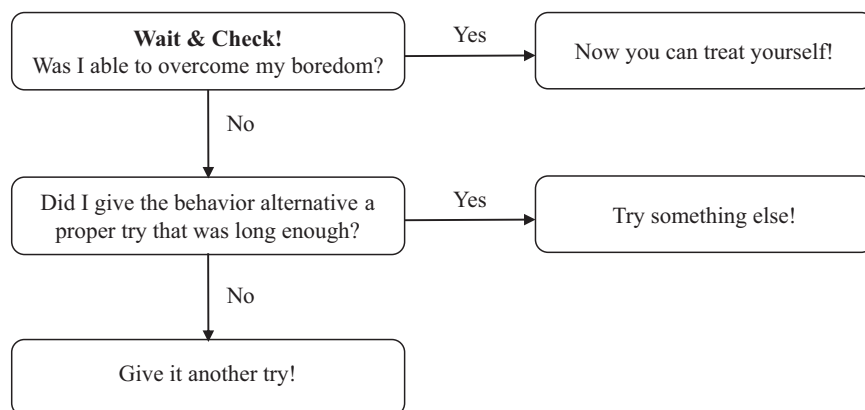


Fig. 7.1 Grid to Review the Success of an Alternative Activity



Fig. 7.2 Keeping Balance (TS 1.1)

7.4 Psychoeducation for Performance Anxiety and Procrastination

7.4.1 *Keeping Balance*

As introduced in module 1, module 2 visualizes the development of Internet use disorder with the help of a pair of scales (Fig. 7.2). In this module, Ps read the case example of David, who has performance anxiety. David avoids tasks that scare him by postponing them and using the Internet to distract himself.

Hand out the worksheet “David Has the Jitters” (WS 2.1; Fig. 7.3) and pin the trainer sheet “Keeping Balance” (TS 1.1; Fig. 7.2) from module 1 on the blackboard.

This visualizes the concept behind dysfunctional Internet use and creates a connection to the first module.

Keeping Balance

Just like in the previous session, I want you to picture a pair of scales. The real world is on the left, and the virtual world is on the right weighing pan. As long as they are well balanced, we can switch between both worlds flexibly and without trouble—just like a little manikin balancing over the beam of the scales. But if the scales tip and the virtual world overbalances, this can quickly lead to problems in the real world. It will get harder and harder to restore balance and switch between both worlds. Next, we will read the case example of David. While doing so, please consider whether his pair of scales is still in balance. What indicates that David's Internet use is still well balanced? What speaks against it? What do the real and the virtual world mean to him? What are his thoughts concerning the real and the virtual world? How does he act?

Trainer Instructions As another blackboard panel will be needed during psychoeducation, it is suggested to divide the blackboard into two halves. While one half can be used to visualize the scales and the vicious circle, the other half can be used for David's change plan. The blackboard panels should be present during the entire session.

During psychoeducation, it is advised to continually add information on Internet use disorder and procrastination on the panel. Afterward the exercises, the blackboards can be used to refresh the Ps memory and to give a sense of orientation of the topics covered.

7.4.2 Case Example “David Has the Jitters” (WS 2.1; Fig. 7.3)

“Please keep in mind that you have a class test next Friday,” David's math teacher says. As soon as David hears the words “class test,” he is abruptly torn from his daydreams. “A class test? Not again!” he mumbles to himself as he feels his hands growing cold and sweaty. He slowly heaves himself out of his seat and trudges out of the classroom alongside Henry. “Do you understand what we are doing at the moment?” David asks his friend. “Well, not really,” Henry responds, “but we still have an entire week left for us to understand everything.”

“I will never understand geometry, even less so in one week,” David grumbles broodily. He is in a bad mood and barely says anything all morning. All he can think about are numbers, circles, triangles and his fear of completely failing



CASE EXAMPLE "DAVID HAS THE JITTERS"

"Please keep in mind that you have a class test next Friday", David's math teacher says. As soon as David hears the words "class test", he is abruptly torn from his daydreams. "A class test? Not again!" he mumbles to himself as he feels his hands growing cold and sweaty. He slowly heaves himself out of his seat and trudges out of the classroom alongside Henry. "Do you understand what we are doing at the moment?", David asks his friend. "Well, not really.", Henry responds, "but we still have an entire week left for us to understand everything." "I will never understand geometry, even less so in one week", David grumbles broodily. He is in a bad mood and barely says anything all morning. All he can think about are numbers, circles, triangles and his fear of completely failing his next math test. "And yet I really need to achieve a good grade again soon, otherwise my math teacher will think I am a total failure." By now it has even come so far that he is afraid of his next math lesson. "I never understand anything anyway", he thinks to himself. That day's sport lesson didn't go as well as usual either. "Damn!", David curses, "I just can't do anything right! I'm always bad at sports! Everything is going wrong!" After school, he walks straight home. He is angry with himself and with his math teacher. His father is already waiting at home. "Hello David!", he calls from the kitchen, "how was your day at school?" "Leave me alone!", David growls through clenched teeth. "Did you get a test back?", his father probes further. "No!", David answers in an annoyed tone. "Then I assume there's going to be a test soon", his father pushes on, "Chin up, after all, the last test went well too." "I only got a C in the last test, and even that was solely because it was an easy one", David replies. "I revised and practiced the calculations for hours and hours last time and in the end, it didn't pay off at all. It was incredibly exhausting and yet absolutely pointless.", David thinks to himself, feeling helpless. "If you start revising a few days earlier there's nothing

that can go wrong", his father tries to comfort him. "That's true", David admits to himself. "But before I do that I really have to check my E-Mail."

Immediately, a mass of things spring to his mind that he still has to take care of first. "It'll be best if I check my E-Mails first." Henry had wanted to send him a new skateboarding video. "It is long overdue that I watch that. I desperately need to learn new tricks on the board, otherwise the others will be better than me." Therefore it is clear that David must see this video. Once done watching, David remembers that he must still take care of his virtual village that he spent the last weeks laboriously building online. "I urgently need to secure it against attacks and prepare the conquest of the next village. That simply can't wait and it is a lot more fun. I'm always good at that.", David thinks to himself proudly. He does not notice the time passing at all. Only after he is finished with everything and his gaze falls on his Math book does his bad conscience flare up. His good mood is gone immediately. All of a sudden, he feels completely rigid and he senses a lump in his throat. David swallows. Just thinking of math is enough to make him feel nauseous. Suddenly, he feels very small again "With me there's just nothing left to save concerning math. I always have failed and I always will fail at it." He clicks around his screen unenthusiastically, until he finds himself on a social media site. "Oh, a new message!". His classmate Milla, whom he has a crush on at the moment, invited him to her birthday party! Suddenly, David is once again happily caught in a daydream. His entire body is tingling with joy. "Cool, Alex and Lucas are online already." And with a pleasantly warm feeling in his stomach, he begins to game with his friends.

It is only when David's father comes into his room to check whether he is preparing for the upcoming test that he averts his gaze from his computer. Horrified, he realizes that he has not yet started revising. Once again, the fear and the anger that had already troubled him that morning come up in David. His

Fig. 7.3 Extract from WS 2.1—"David Has the Jitters"

his next math test. “And yet I really need to achieve a good grade again soon, otherwise my math teacher will think I am a total failure.” By now it has even come so far that he is afraid of his next math lesson. “I never understand anything anyway,” he thinks to himself. That day’s sport lesson didn’t go as well as usual either. “Damn!” David cusses, “I just can’t do anything right! I’m always bad at sports! Everything is going wrong!”

After school, he walks straight home. He is angry with himself and with his math teacher. His father is already waiting at home. “Hello David!” he calls from the kitchen, “how was your day at school?”

“Leave me alone!” David growls through clenched teeth. “Did you get a test back?” his father probes further. “No!” David answers in an annoyed tone. “Then I assume there’s going to be a test soon,” his father pushes on, “Chin up, after all, the last test went well too.”

“I only got a C in the last test, and even that was solely because it was an easy one,” David replies.

“I revised and practiced the calculations for hours and hours last time and in the end, it didn’t pay off at all. It was incredibly exhausting and yet absolutely pointless,” David thinks to himself, feeling helpless. “If you start revising a few days earlier there’s nothing that can go wrong,” his father tries to comfort him. “That’s true,” David admits to himself. “But before I do that I really have to check my E-Mail.”

Immediately, a mass of things spring to his mind that he still has to take care of first. “It’ll be best if I check my E-Mails first.” Henry had wanted to send him a new skateboarding video. “It is long overdue that I watch that. I desperately need to learn new tricks on the board, otherwise the others will be better than me.” Therefore it is clear that David must see this video. Once done watching, David remembers that he must still take care of his virtual village that he spent the last weeks laboriously building online. “I urgently need to secure it against attacks and prepare the conquest of the next village. That simply can’t wait and it is a lot more fun. I’m always good at that,” David thinks to himself proudly. He does not notice the time passing at all. Only after he is finished with everything and his gaze falls on his Math book does his bad conscience flare up. His good mood is gone immediately. All of a sudden, he feels completely rigid and he senses a lump in his throat. David swallows. Just thinking of math is enough to make him feel nauseous. Suddenly, he feels very small again. “With me there’s just nothing left to save concerning math. I always have failed and I always will fail at it.” He clicks around his screen unenthusiastically, until he finds himself on a social media site. “Oh, a new message!” His classmate Mila, whom he has a crush on at the moment, invited him to her birthday party! Suddenly, David is once again happily caught in a daydream. His entire body is tingling with joy. “Cool, Alex and Lucas are online already.” And with a pleasantly warm feeling in his stomach, he begins to game with his friends.

It is only when David's father comes into his room to check whether he is preparing for the upcoming test that he averts his gaze from his computer. Horrified, he realizes that he has not yet started revising. Once again, the fear and the anger that had already troubled him that morning come up in David. His heart beats faster and his hands clench themselves into fists. "Math always goes wrong anyway," David mumbles, frustrated, "I still have to play another round first, otherwise I can't concentrate." It's gone dark outside, but that does not bother David. Once again, he has completely forgotten about his math test.

After the story has been read aloud, the Ps should discuss whether David's scales are still in balance or not.

The goal of this exercise is to identify, evaluate, and categorize the functional and dysfunctional cognitions and behaviors that are typical for individuals affected by Internet use disorder. This is achieved with the help of a fictional story. An additional benefit is that the Ps relate to David and learn to identify their own possible dysfunctional cognitions. The story conveys that many people deal with performance anxiety, which is depathologizing.

7.4.3 *Vicious Circle*

After David's behavioral patterns and thoughts have been named, discuss how these could contribute to the development of an imbalance between the real and the virtual world. The vicious circle illustrates the individual development of an Internet use disorder as seen in the case example. For this, the worksheet "David's Vicious Circle" (WS 2.2; Fig. 7.4) should be handed out. The Ps are instructed to discuss the unpleasant feelings that lead to a more intense Internet use as well as the pleasant feelings that are induced by the Internet. The group should analyze the long-term, negative consequences caused by a permanent and intense Internet use. They are invited to discuss David's coping strategy of spending even more time online to avoid the ensuing negative affect. In accordance with the WS 2.2, David's vicious circle is drawn around the pair of scales that are pinned on the blackboard, and the Ps' ideas are written down on it.

Vicious Circle of Boredom

Trainer: "Is David's beam scale still well balanced? What indicates this? What speaks against it?"

Possible answer: "David's scales are out of balance."

Trainer: "Now, our task is to fill out David's vicious circle of positive and negative thoughts. Let's also gather the negative short-term and long-term

consequences. Please collect your ideas on your worksheets. How does David feel when he is online?"

Possible answer: "He feels successful and he can repress his fear of the upcoming math exam."

Trainer: "Do problems arise because of his intense Internet use?"

Possible answer: "He gets in trouble with his father and he forgets to start studying for his math exam, which makes his performance anxiety even worse."

Trainer: "How do these problems in the real world make him feel?"

Possible answer: "David feels frustrated, anxious and helpless."

Trainer: "What do you think: What will David do to get rid of these unpleasant feelings?"

Possible answer: "He will probably spend a lot of time online to avoid his bad feelings and his performance anxiety."

Trainer: "David's scales have become unbalanced. David's real life is full of negative feelings and thoughts. He often feels anxious and embarrassed. He prefers to spend most of his free time on the Internet to shirk away from important tasks like the upcoming class test. When he is online, he is distracted and he always comes up with good excuses for not being able to start revising. As soon as he comes back to everyday life though, he feels anxious and has a bad conscience because he hasn't done anything for school yet. Because of that, it doesn't take long before David is not able to keep up with the subject material anymore. Instead, he dawdles away his time, and the Internet takes up a lot of it. He repeatedly tries to repress his performance anxiety with the help of the Internet, but his success is only very short-lived."

Exemplary Answers for David's Vicious Circle

- *Pleasant feelings*: distraction from worries, fun, joy, pleasure, flow, interest, success, and entertainment.
- *Negative consequences*: underachievement, dawdles away time, in trouble with parents, stress, and bad conscience.
- *Unpleasant feelings*: fear and insecurity are increased by avoidance, shame, feelings of guilt, and depression.

The vicious circle conveys how the Internet and computer games can be used as a coping strategy for performance anxiety and procrastination. Spending a lot of time on the Internet is a distraction strategy to avoid unpleasant and daunting tasks. In the case example, David avoids revision for his class test. The Ps are meant to work out that the dysfunctional use of the Internet can lead to a long-term dichotomous experience of a negative real world and a positive virtual world.

This exercise teaches the Ps that postponing and avoidant behavior causes fears and leads to an ever stronger resistance. This in turn results in an increased urge to avoid these negative emotions by using the Internet more intensely.

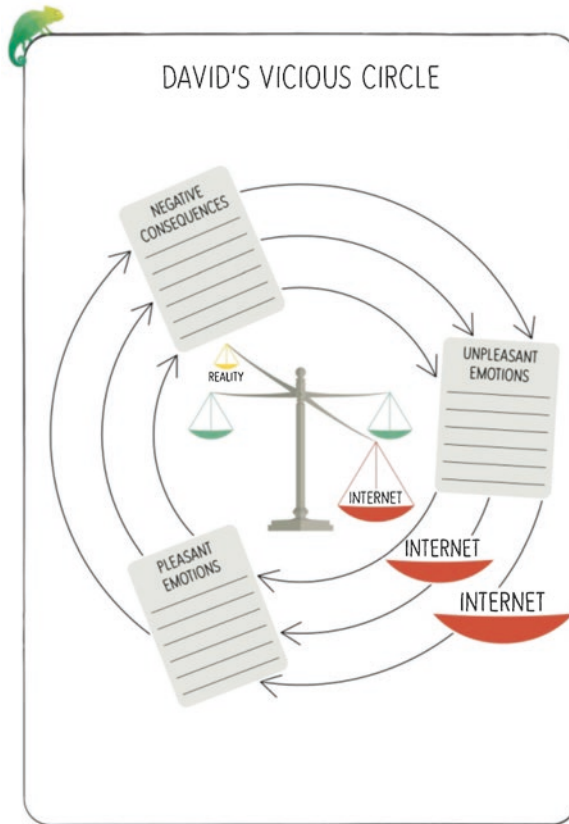


Fig. 7.4 David's Vicious Circle (WS 2.2)

In the following exercise, the Ps learn how performance anxiety and procrastination can be reduced by directly confronting oneself with the tasks and dealing with them on the spot.

Breaking the Vicious Circle: a) Reduction of Procrastination (Additional Information for WS 2.2)

Many people go through phases in their lives in which they struggle to motivate themselves to go through with unpleasant tasks. A lot of the time, we are prone to postponing these unpleasant activities. What about you? How do you manage to overcome your lack of motivation to do unpleasant things?

Procrastination means that you keep postponing important things again and again. This makes the reluctance to do these tasks even larger. It also leads to the misconception that it is necessary to do other things first, before being able to start the unwanted task, for example playing computer games. The easiest solution is to start with the unpleasant task before the reluctance and the distraction become too strong. Afterwards, you can reward yourself for your good work.

**Breaking the Vicious Circle: b) Reduction of Performance Anxiety
(Additional Information for WS 2.2)**

The concept of anxiety is very similar. When things frighten us, we tend to avoid them, just like David avoids thinking about his class test. However, the more you avoid your fear, the stronger it grows. The only way to get rid of the fear is to face it. You should not avoid your anxiety. Instead, you should immediately deal with the anxiety-inducing situation. For example, David should deal with his thoughts about the class test.

7.5 Identifying and Restructuring Unfavorable Cognitions

7.5.1 Reality Check

Now, the metaphorical leading figure, the chameleon, returns. The chameleon introduces “tricks” to solve certain problems. The first trick is the “reality check” (TS 1.3; Fig. 7.5), which modifies dysfunctional cognitions underlying performance anxiety (Schlarb, 2012). Furthermore, it reduces the fear of failure and the chronic delaying of work, which is known as procrastination.

During this session, the reality check is put into practice with David’s case example. Ps learn that the individual evaluation of a situation leads to different emotional experiences. With the examples of performance anxiety and procrastination, the Ps practice recognizing and reformulating negative appraisals into more realistic and helpful evaluations.

In module 1, the “demandingness thought” as dysfunctional cognition was introduced. David’s story focuses on another dysfunctional thought pattern, known as “overgeneralized thoughts”. During overgeneralizing, individuals tend to evaluate themselves or their experiences in a very global manner.



Fig. 7.5 Symbol for Reality Check (TS 1.3)

Reality Check

Trainer: “David is absolutely terrified about his class test. To not be reminded about the test, he delays all activities that have to do with it. Why does David feel so bad?”

David has many thoughts that pull him down and cause unpleasant feelings. As you already know, these negative thoughts are called downers, because they make you feel bad. They aren’t helpful, and they usually aren’t realistic, either. We already got to know the first category of downers in Toni’s story—the so called “demandingness” thoughts. Do you remember how they can be identified?”

Possible answer: “You can identify must thoughts by the words *must* or *have to*.”

Trainer: “And how can you rephrase must thoughts so that they don’t pull you down? How can you rephrase them into a more realistic and encouraging thought?”

Possible answer: “Thinking *I can* or *it would be nice*, if would be more realistic and helpful than *I must*.”

Trainer: “There are different types of downers. In David’s story, many overgeneralized thoughts have crept into his mindset. Overgeneralized means that one thinks something is always a certain way, just because they experienced it that way one or two times. Overgeneralized thinking is unrealistic and causes unnecessary anxiety or worries. For example, David thinks that he will *always* fail his math exams, just because he got a bad grade once.

Do you remember the trick that the chameleon showed you to identify and stop downers so that they don’t pull you down further? The trick is called the “reality check”.

Now, let’s have a look and see which downers we can find in David’s story. Let’s take a close look at demandingness-downers (they contain the words “must” or “have to”) and overgeneralized-downers. We can identify overgeneralized downers by searching for overgeneralizations in our thoughts, which is usually marked by the words “always, everyone, absolutely, no way, everybody, no one”.

Do you find David’s thoughts and expectations realistic? Which alternatives could be more realistic and could make him feel better?”

For the “reality check” exercise, the trainer sheet “Reality check” (TS 1.3) is pinned to the blackboard. This serves the purpose of visualizing the technique of cognitive restructuring.

Next, David’s downers are collected in a group exercise and gathered on the blackboard. To take notes, the worksheet “David’s reality check” (WS 2.3; Fig. 7.6) is handed out. Afterwards, the Ps discuss whether David’s downers are realistic, and they should realize that his downers are distorted and unrealistic. Then, the Ps should work out more helpful and realistic alternative thoughts that will make David feel better.

By the end of the exercise, the Ps understand that one can evaluate situations very differently. These evaluations can result in negative emotions and lead to avoidant

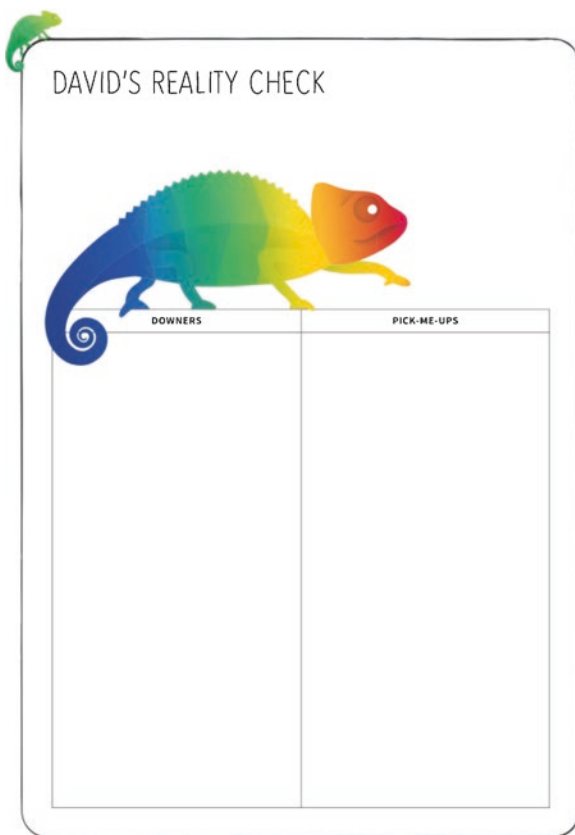


Fig. 7.6 David's Reality Check (WS 2.3)

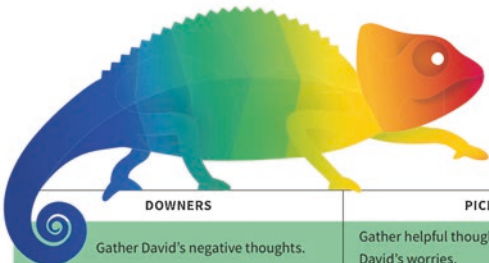
behavior. David's case example introduces "overgeneralized thoughts" and emphasizes that people often even have multiple misconceptions at once. Individuals with performance anxiety and a tendency toward procrastination are often characterized by various detrimental thought patterns, e.g., demandingness thoughts and overgeneralized thoughts. The Ps are now asked to detect demandingness thoughts and overgeneralized thoughts in David's case example. They should identify David's detrimental cognitions, check them for their realistic merit, and re-evaluate them in a way that makes them more helpful to David. This means that David's performance anxiety and procrastination do not increase. Possible solutions can be found in TS 2.1 (Fig. 7.7).

7.5.2 Thought Stopping

After having completed the reality check, the Ps are reminded of the thought stopping exercise from the first module. Thought stopping is a helpful strategy to change downers into pick-me-ups. For the sake of visualization, the trainer sheet "Thought Stopping" (TS 1.5) is pinned to the blackboard once again (Fig. 7.8).



DAVID'S REALITY CHECK



DOWNERS	PICK-ME-UPS
Gather David's negative thoughts.	Gather helpful thoughts that could disconfirm David's worries.
"I will never understand geometry, especially not in one week."	"It's true that I find geometry really difficult sometimes, but if I try hard and have a good go at it now, I will manage to work through the subject matter in one week."
"I really need to achieve a good grade again soon, otherwise my math teacher will think I am a total failure."	"It would be nice to get a good grade in math again soon. I must admit that I feel a little ashamed of my bad grades."
"I never understand anything anyway!"	"Sometimes I really don't understand everything straightaway, but I'm certain that it will work out with a little more revision."
"I simply can't do anything right! I'm always bad at sports! Everything is going wrong!"	"Sports didn't go well either, today. There are just days when things aren't meant to be. It will all look better again tomorrow."
"I desperately need to learn new tricks on the skateboard, otherwise the others will be better than me."	"It would be nice to learn a few new tricks on the skateboard again. That would surely impress the others."
"There is nothing I can do about math. I always have failed, and I always will fail."	"Math quite simply isn't my subject. But some things just require more work for them to go smoothly."
"Math always goes wrong anyway! I just have to play another round first, otherwise I can't concentrate."	"It would be nice if I could play another round before I start my revision. But then I will surely find it very difficult to stop again. Therefore, I will revise first and then reward myself with a round of computer games afterwards."

Fig. 7.7 David's Reality Check – Solutions (TS 2.1)

Last week, you learned a second trick to assert yourselves against downers. Who can remember it? Thought stopping is an exercise in which you say: Stop! I will not continue thinking like this... This thought is unrealistic, and it makes me feel bad. I will try and find a more realistic and helpful thought.



Fig. 7.8 Symbol for Thought Stopping (TS 1.5)

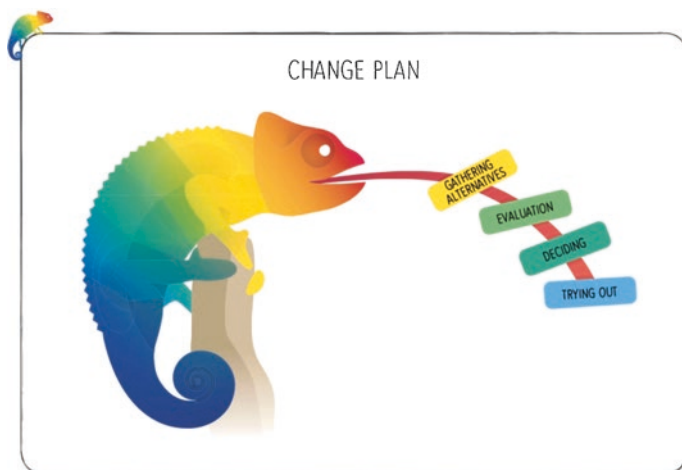


Fig. 7.9 Symbol for Change Plan (TS 1.6)

7.6 Problem-Solving Skills and Behavior Activation Training (Change Plan)

As in module 1, the cognitive restructuring technique is followed by the “change plan” exercise. For this, the trainer sheet “Change Plan” (TS 1.6; Fig. 7.9) is pinned to the blackboard. Again, the change plan is carried out in two steps. First, David’s current behavior is identified in the form of a problem analysis. The everyday activities that cause performance anxiety, procrastination, and positive excitement are to be listed. For this, the trainer goes through the story with the Ps, gathering answers to the following questions: In which situations is David anxious, ashamed, or has a bad conscience? In which situations do these feelings not occur?

Change Plan: (a) Problem Analysis

Trainer: “We’ve spent a lot of time looking at David’s thoughts and feelings. Now, let’s have a look at how he behaves and whether he could behave differently? In which situations is David anxious, embarrassed or plagued by his bad conscience?”

Possible answers: When he

- Hears, that there will be a class test.
- Thinks about geometry.
- Thinks about his next math lesson.
- Remembers his last math test.
- Talks to his father about the class test.

Trainer: “In which situations do these unpleasant feelings not occur?”

Possible answers: When he:

- Watches videos on the Internet.
- Plays computer games.
- Reads texts from his friends.
- Plays online with his friends.
- Daydreams.

Next, the Ps should develop a change plan. They should come up with possible alternatives for moments in which David’s performance anxiety rises. For this, the exercise sheet “David’s Change Plan” (WS 2.4; Fig. 7.10) is handed out. Examples for possible solutions can be found on the trainer sheet “David’s Change Plan (Solutions)” (TS 2.2; Fig. 7.11). Alternative actions are collected in the group and gathered on the blackboard. The Ps are asked to write down four action alternatives for David in the first column.

Next, the Ps should note down the advantages and disadvantages of each new activity in the second and third column of their worksheets. Finally, they should decide which alternative they would deem best for David by marking it with a cross.

Change Plan: (b) Problem-Solving Training

In the vicious circle, we saw that David’s avoidant behavior leads to various problems. How can David behave differently? In our first session, we talked about how the chameleon can transform and change its color depending on the situation. It can hold still and watch for a long time, but it can move as quickly as lightning and catch prey with its slingshot-like tongue. David, too, could transform and try out new things. Your next task is to create a clever change plan for David, following these three steps:

What can David do instead of playing on the computer? Gather ideas and write them down!



DAVID'S CHANGE PLAN				
GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
David's alternatives to using the Internet / playing computer games	Advantages	Disadvantages	Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?

Fig. 7.10 David's Change Plan (WS 2.4)

Which advantages and disadvantages do these alternatives have?
Now it is important to make a decision and give the alternative a try.
Your task: Gather four things that David could try out as an alternative to playing on the computer. These should help reduce his performance anxiety and combat his habit of postponing important things.

After David's change plan has been developed, the WS 2.5 (Fig. 7.12) "My Change Plan Against Performance Anxiety" should be handed out. Now, the Ps are asked to think of three alternatives to using the Internet and playing computer games. The Ps are instructed to write down the advantages and disadvantages of each alternative. Finally, they should choose an alternative to try out at home.

My Change Plan Against the Habit of Postponing Important Things
"This trick does not only work for David, but for every single one of us. How do you cope when you've got to do tasks that you find unpleasant or that frustrate or scare you? Who here plays computer games for hours or surfs the Internet to distract themselves in that situation?
What can you do to combat your performance anxiety and your habit of postponing important things? Let's gather ideas together. Now create your own change plan to apply at home. Write down three behavior alternatives in



DAVID'S CHANGE PLAN				
GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
David's alternatives to using the Internet / playing computer games	Advantages	Disadvantages	Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?
1. Have someone quiz him a little every day	• Revision in little steps makes binge revision under pressure unnecessary • Fear is reduced • Competence increases	• Daily confrontation with the subject that causes fear and discomfort • Unpleasant • Laborious	X	
2. Imitate the test at home	• Fear is reduced • Possible to practice the exam situation • Fears can be identified and alleviated	• Not a real exam situation • Strenuous • Unpleasant		
3. Arrange a pre-test with the teacher	• Performance appraisal possible • Teacher is in the picture	• Unpleasant		
4. Revise together with other students	• You learn how other students deal with exam situations • Transfer of knowledge between students • Reciprocal support	• You realize that other students might understand the subject better • Comparison and performance pressure		
5. Make a revision plan	• Time management • You can start to study early enough	• You have to deal with the disliked subject • Additional effort for planning		

Fig. 7.11 Possible Solutions for David's Change Plan (TS 2.2)

your change plan and think of the advantages and disadvantages of every activity. Decide on one alternative that you are going to try out until next week. Think of a reward you can give yourself after having followed through with your plan. We are looking forward to hearing about your experiences next week.”

Following the decision on an alternative, it is important to give it a try and to evaluate its success.

Children and adolescents with performance anxiety often procrastinate. In many cases, this is reflected in an excessive use of the Internet. During this exercise, Ps learn to generate, evaluate, and put alternative behaviors into practice when they procrastinate.



MY CHANGE PLAN AGAINST PERFORMANCE ANXIETY				
GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
My alternatives to using the Internet / playing computer games	Advantages	Disadvantages	Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?

Fig. 7.12 My Change Plan Against Performance Anxiety (WS 2.5)

7.7 Homework and Conclusion

7.7.1 Homework

The Ps are assigned their homework. They should try out their alternative of choice from WS 2.5 and document their experience. If time allows, have each P present their chosen alternative. Moreover, Ps should fill in the worksheet “My Reality Check” (WS 2.6; Fig. 7.13). They should collect their own downers and reformulate their personal pick-me-ups.

Homework

For your homework, please choose one alternative from your personal change plan and give it a try until next week. Keep in mind that it is important to check whether it is helping you combat your performance anxiety or procrastination. In addition, please do your own reality check: explore your own downers and try to find pick-me-ups (WS 2.6; Fig. 7.13).

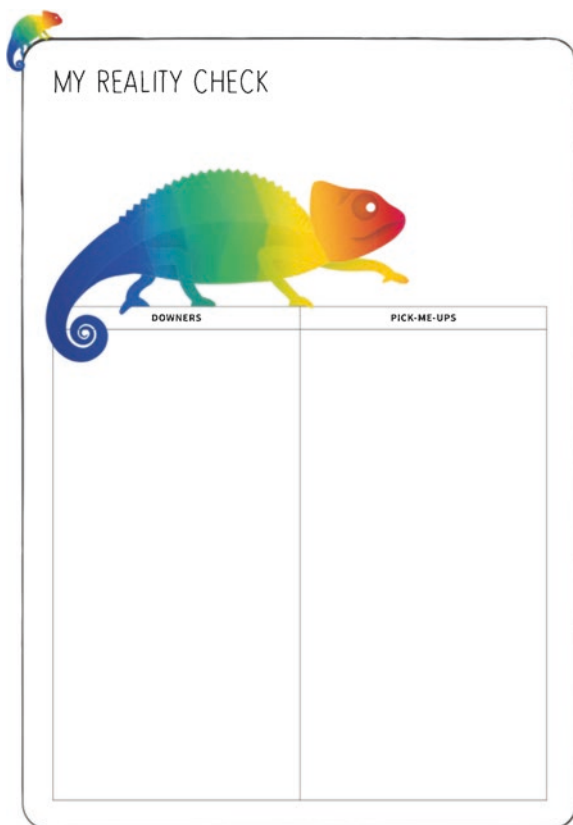


Fig. 7.13 My Reality Check (WS 2.6)

7.7.2 Conclusion

During a flashlight exercise, each Ps should answer the following questions in one sentence: *What do I take home from this session? Has my idea of Internet use and video games changed? How will I implement my change plan this week?*

Finally, the trainer dismisses the group.

References

Schlarb, A. A. (Ed.). (2012). *Praxisbuch KVT mit Kindern und Jugendlichen: Störungsspezifische Strategien und Leitfäden ; mit Online-Materialien* (1. Aufl.). Weinheim: Beltz.

Chapter 8

Module 3: Social Anxiety



8.1 Session Procedure

Homework Evaluation (10 min):

- My Change Plan Against Performance Anxiety
- My Reality Check

Psychoeducation (35 min):

- Keeping Balance
- Case Example: “Leila is Looking for Friends”
- Leila’s Vicious Circle

Cognitive Restructuring (20 min):

- Leila’s Reality Check

Problem-Solving Training for Social Anxiety (15 min):

- Leila’s Change Plan

Homework and Conclusion (10 min):

- My Change Plan for Friendship
- My Vicious Circle
- Conclusion

8.2 Material (Available Online)

- Worksheet (WS) 3.1: Case Example “Leila is Looking for Friends”
- Worksheet (WS) 3.2: Leila’s Vicious Circle
- Worksheet (WS) 3.3: Leila’s Reality Check

- Worksheet (WS) 3.4: Leila's Change Plan
- Worksheet (WS) 3.5: My Change Plan for Friendship
- Worksheet (WS) 3.6: My Vicious Circle
- From Module 1: Trainer Sheet (TS) 1.1: Keeping Balance
- From Module 1: Trainer Sheet (TS) 1.2: The Chameleon
- From Module 1: Trainer Sheet (TS) 1.3: Reality Check
- From Module 1: Trainer Sheet (TS) 1.5: Thought Stopping
- From Module 1: Trainer Sheet (TS) 1.6: Change Plan
- Trainer Sheet (TS) 3.1: Leila's Reality Check (Solutions)
- Trainer Sheet (TS) 3.2: Leila's Change Plan (Solutions)

8.3 Welcome, Revision, Homework, and Session Goals

The Ps are welcomed, the previous sessions are briefly revised, and the homework is discussed. The grid in Fig. 8.1 helps to evaluate whether the individual change plan was successful. It can be used as an orientation to check the homework assignment "My Change Plan Against Performance Anxiety." Afterwards, the procedure and goals of the current session are presented.

Welcome and Discussion of Homework

In the last two sessions, you met Toni and David, and we discussed why they spend so much time on the computer. The Internet helps Toni deal with his boredom. He can look at interesting content and stay in touch with his friends without having to overcome his laziness. David uses the Internet to flee from everyday challenges such as his upcoming math test.

Your homework assignment for today was to try out an alternative from your change plan against performance anxiety. How did you get along with your change plan last week? Did it work? Did you give it a try? Did you enjoy yourselves? Was it hard? Would you choose your action alternative again? Who would like to tell us about their experiences?

As a second assignment, we asked you to find your own downers and to transform them into pick-me-ups in your own reality check. Who would like to share what you worked out?

In today's session, you will meet Leila. Leila is extremely insecure during social interaction. This means that she is very anxious and hesitant when she is around other people. She has trouble making friends and getting into contact with others.

Now let us read her story. Then, we will discuss whether Leila's Internet usage is still balanced or if she is already caught in the vicious circle of Internet addiction. Finally, we will do a reality check and develop a change plan for Leila.

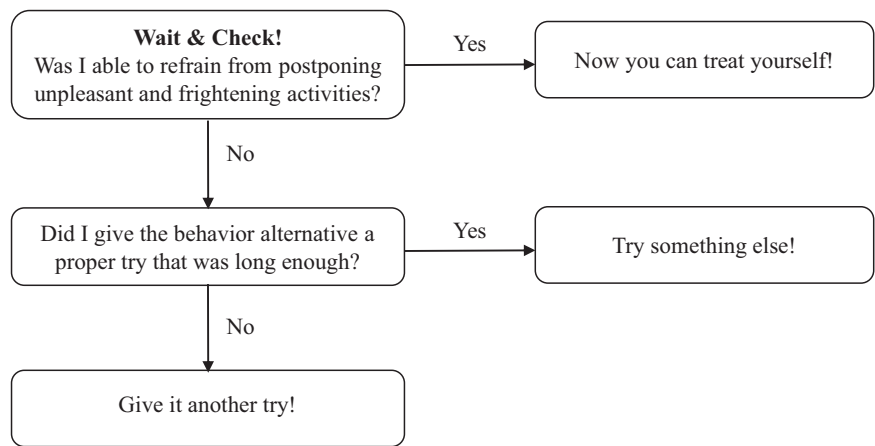


Fig. 8.1 Grid to Review the Success of an Alternative Activity



Fig. 8.2 Keeping Balance (TS 1.1)

8.4 Psychoeducation for Social Anxiety and Internet Use Disorders

8.4.1 Keeping Balance

The trainer sheet “Keeping Balance” (TS 1.1; Fig. 8.2) is pinned to the blackboard. Analogous to the previous two modules, the Ps learn under which circumstances Internet activity can lead to negative consequences in everyday life. Module 3 specifically focuses on the problem of social anxiety in children and adolescents. Therefore, the Ps learn under which circumstances problems in one’s social life can become a causal prerequisite for Internet use disorder. This is visualized with the help of Leila’s story titled “Leila is Looking for Friends,” which is to be handed out to all Ps (WS 3.1; Fig. 8.3).

Keeping Balance

You have already learned about the beam scales in detail. Can someone explain the model to the group again?

The scales visualize the balance or imbalance between the real and the virtual world. We can only switch between both worlds without problems if they are balanced. We will read a new case example today. It tells the story of Leila, who is trying to find new friends and ends up spending a lot of time in chatrooms. Think about what the real and the virtual world mean for Leila. Which thoughts does she have concerning the real world and the virtual world? How does she behave?

In the next step, think about whether Leila's scales are balanced or not. Additionally, think about why Leila enjoys being online so much.

Trainer Instructions As another blackboard illustration will be needed for psychoeducation, it is advised to subdivide a large blackboard into two halves. While one half is meant for the scales and the vicious circle, the second half is for Leila's change plan. All blackboard panels are to be visible during the entire session. During psychoeducation, notes can continually be added. After that, the blackboard notes can be used to refresh the Ps memory and to offer general orientation during the session.

8.4.2 Case Example “Leila is Looking for Friends” (WS 3.1)

Leila is sitting in English class all alone. She would love to make plans to go to the swimming pool after school, but she is too afraid to ask anyone. “It’s awful, nobody wants me to come along,” she thinks to herself. She just doesn’t quite know how to start a conversation. What if the others think she’s boring or if they don’t like her? “Everyone has friends but me. That’s horrible!” she thinks. “Maybe I could ask Sara.” She had helped her with a math problem a short while back. “Surely she wouldn’t have done that if she hadn’t liked me at least a little bit.” Leila is still a little unsure of herself, but she decides to muster up all of her courage and talk to Sara during the next break. “Yes, Sara must become my new friend, she is my only chance!”

Leila already feels uneasy when the school bell rings. She nervously stands outside of the classroom, waiting for Sara to come out. Her heart is racing,



CASE EXAMPLE "LEILA IS LOOKING FOR FRIENDS"

Leila is sitting in English class all alone. She would love to make plans to go to the swimming pool after school, but she is too afraid to ask anyone. "It's awful, nobody wants me to come along", she thinks to herself. She just doesn't quite know how to start a conversation. What if the others think she's boring or if they don't like her? "Everyone has friends but me. That's horrible!", she thinks. "Maybe I could ask Sara." She had helped her with a math problem a short while back. "Surely she wouldn't have done that if she hadn't liked me at least a little bit." Leila is still a little unsure of herself, but she decides to muster up all of her courage and talk to Sara during the next break. "Yes, Sara must become my new friend, she is my only chance!"

Leila already feels uneasy when the school bell rings. She nervously stands outside of the classroom, waiting for Sara to come out. Her heart is racing, and her stomach is grumbling as soon as the first student walks past her. "Oh god, here comes Sara", she thinks to herself. Without even giving her a glance, Sara storms past Leila straight to Hannah, Jacob and Ethan. "How awful, she didn't even notice me! But no one ever notices me anyway." She walks over to them shakily and hesitantly. She is too afraid to look them in the eye and stares at the floor instead. Leila is petrified. "I bet I'll blush again because I'm so nervous. I always blush when I'm nervous, it's so embarrassing! I'm feeling hot already. And in the end, they'll all laugh at me. I'll never find friends like this!", she thinks to herself in despair. Her body is completely tense, and her shoulders are rigid. As Leila approaches the group, their mumbling slowly grows quieter until they are completely silent. "How terrible, now they've even suddenly stopped talking. I'm sure they were talking about me. Everybody gossips about me anyway." Timidly, she turns toward Sara. She can feel a lump growing in her throat, making it hard for her to breathe. She'd rather not say anything at all anymore, but she has to now, because they are all looking straight at her.

Leila doesn't even remember how to start a conversation anymore and quietly stutters: "Sara, umm, uh... so I, I wanted to ask... well, the weather is so great today and it's supposed to get even hotter this afternoon and I thought... well, I thought it would be nice to go to the swimming pool today. So, umm, uh... of course only if you want to. But... but if that isn't possible... oh, never mind."

They are still staring at her, but no one says a word. "Oh no, oh no!", Leila thinks to herself, "How awful, nobody is saying anything! The others probably think my idea is boring!" "Only people with good ideas can find friends", she thinks to herself. One more time, Leila musters all her courage and comes up with a story in another attempt to impress Sara: "Do you know what I did last weekend? I was at the swimming pool and I jumped off the ten-meter board! That was totally extreme! And so cool!"

Still, no one shows any sign of reaction. She risks a quick glance upwards. Jacob and Hannah are looking at each other and rolling their eyes. Immediately, Leila is ashamed of herself and wants to vanish off the face of the earth immediately. All of a sudden, Sara bursts out laughing and asks Leila: "What exactly do you want?" Now, everyone has joined in laughing. With a wavering voice, Leila manages to scrape up the rest of her courage: "Well, uh, I actually just wanted to ask you, if you...", "If I was going to come to the pool with you?", Sara finishes her question. "Sorry Leila, but I already have plans with Jacob, Ethan and Hannah. We were going to watch that new movie at the movie theater. That's also what we were talking about just now, actually." Leila nods, ashamed of herself. Without another word, she turns around and flees from the situation as quickly as she can. Once again, she hears roaring laughter in the background and starts walking faster. "Just get away as quickly as possible!", she tells herself and starts running as she feels tears brimming in her eyes. "Nobody likes me! I wish I never had to go back to school again!"

Fig. 8.3 Extract from WS 3.1 - "Leila is Looking for Friends"

and her stomach is grumbling as soon as the first student walks past her. “Oh god, here comes Sara,” she thinks to herself. Without even giving her a glance, Sara storms past Leila straight to Hannah, Jacob and Ethan. “How awful, she didn’t even notice me! But no one ever notices me anyway.” She walks over to them shakily and hesitantly. She is too afraid to look them in the eye and stares at the floor instead. Leila is petrified. “I bet I’ll blush again because I’m so nervous. I always blush when I’m nervous, it’s so embarrassing! I’m feeling hot already. And in the end, they’ll all laugh at me. I’ll never find friends like this!” she thinks to herself in despair. Her body is completely tense, and her shoulders are rigid.

As Leila approaches the group, their mumbling slowly grows quieter until they are completely silent. “How terrible, now they’ve even suddenly stopped talking. I’m sure they were talking about me. Everybody gossips about me anyway.” Timidly, she turns toward Sara. She can feel a lump growing in her throat, making it hard for her to breathe. She’d rather not say anything at all anymore, but she has to now, because they are all looking straight at her. Leila doesn’t even remember how to start a conversation anymore and quietly stutters: “Sara, umm, uh... so I, I wanted to ask... well, the weather is so great today and it’s supposed to get even hotter this afternoon and I thought... well, I thought it would be nice to go to the swimming pool today. So, umm, uh... of course only if you want to. But... but if that isn’t possible... oh, never mind.” They are still staring at her, but no one says a word. “Oh no, oh no!” Leila thinks to herself, “How awful, nobody is saying anything! The others probably think my idea is boring!”

“Only people with good ideas can find friends,” she thinks to herself. One more time, Leila musters all her courage and comes up with a story in another attempt to impress Sara: “Do you know what I did last weekend? I was at the swimming pool and I jumped off the ten-meter board! That was totally extreme! And so cool!”

Still, no one shows any sign of reaction. She risks a quick glance upwards. Jacob and Hannah are looking at each other and rolling their eyes. Immediately, Leila is ashamed of herself and wants to vanish off the face of the earth immediately. All of a sudden, Sara bursts out laughing and asks Leila: “What exactly do you want?” Now, everyone has joined in laughing. With a wavering voice, Leila manages to scrape up the rest of her courage: “Well, uh, I actually just wanted to ask you, if you...”

“If I was going to come to the pool with you?” Sara finishes her question. “Sorry Leila, but I already have plans with Jacob, Ethan and Hannah. We were going to watch that new movie at the movie theater. That’s also what we were talking about just now, actually.” Leila nods, ashamed of herself. Without another word, she turns around and flees from the situation as quickly as she can. Once again, she hears roaring laughter in the background and starts walking faster. “Just get away as quickly as possible!” she tells herself and starts

running as she feels tears brimming in her eyes. “Nobody likes me! I wish I never had to go back to school again!”

Leila rides home and is angry at herself and her stupid idea to talk to Sara. As soon as she gets home, she disappears straight into her room. Back at home, she lunges onto her bed with relief and turns on her laptop with joyful anticipation. Leila is active on various forums and has many friends there. She regularly chats with two girls online. When she sees that Maria and Chloe are already online, she is immediately relieved and tells them about what happened. “Finally, I’ve found real friends,” Leila thinks happily, “And it’s so much easier than at school. Here, I feel safe and I don’t have to worry about beginning to stutter or blushing. Everyone here is always friendly and open-minded. I’ve been a part of this online group from the very beginning and I am accepted and respected for my good ideas.” Leila feels so comfortable around Maria and Chloe that she shares her biggest worries with them. And the best part is that she’s never been laughed at or given strange looks. “And how should they,” Leila thinks to herself, “After all, we can’t see each other.”

After the Ps have read the story together, the group discusses whether Leila’s beam scales are still balanced. The goal of this exercise is to consolidate the Ps’ knowledge about functional and dysfunctional cognitions and behaviors that typically arise in people affected by Internet use disorder. With the help of Leila’s case example, the Ps learn these cognitions and behaviors in the context of insecure social contact. The Ps are thereby meant to learn to uncover their own dysfunctional cognitions.

8.4.3 *Vicious Circle*

Next, the development from an imbalance of Internet use to an Internet use disorder is conveyed with the help of the vicious circle. For this, the worksheet “Leila’s Vicious Circle” (WS 3.2; Fig. 8.4) is handed out to all Ps. The Ps are asked to think about which unpleasant feelings lead Leila to spend so much time on the Internet and which pleasant feelings she has after having spent time chatting online. Additionally, the Ps should collect the long-term negative consequences that result from a permanently intense use of the Internet alone or with a partner. Then, the trainer discusses the Ps ideas in the group.

As stated in WS 3.2, Leila’s vicious circle is drawn around the pair of scales, which are pinned to the blackboard. The Ps ideas are written in this circle.

Vicious Circle of Insecure Social Behavior

Trainer: “Are Leila’s scales still balanced?”

Possible answer: “Leila’s scales have become unbalanced.”

Trainer: “It is our job now to complete Leila’s vicious circle of pleasant and unpleasant feelings. Additionally, let us gather the negative short- and long-term consequences. Please write them down on your exercise sheets. We will collect them on the blackboard.”

Trainer: “How does Leila feel when she’s on the Internet?”

Possible answer: “She feels safe and accepted.”

Trainer: “Does her intensive Internet use also cause problems?”

Possible answer: “She doesn’t practice making friends in real life and she limits her relationships to the virtual world.”

Trainer: “How do these problems in the real world make her feel?”

Possible answer: “Leila feels lonely, afraid and sad.”

Trainer: “What do you think: What does Leila do to get rid of these unpleasant feelings?”

Possible answer: “She probably spends a lot of time on the Internet. That way, she will be distracted and will feel better.”

Trainer: “As we have just witnessed, Leila’s scales have become unbalanced. Leila longs to make new friends, but she has trouble approaching people. Sometimes, she is even a little clumsy when talking to others, which is why her classmates laugh at her. Therefore, she often doesn’t feel very comfortable in the real world and tries to find friends online instead. She has more success that way, as she feels more comfortable starting a conversation with people on the Internet. Can you imagine why it could be easier to approach others on the Internet?”

Possible reasons could be the perceived anonymity, the social distance, the perceived controllability, and the time one can take to decide what exactly to write. It is important to see though, that this does not improve her situation in real life at all. Quite on the contrary: The more she withdraws into the Internet, the more chances she will miss to find friends in real life. In turn, this makes her lonely again, wherefore she will spend even more time on the Internet to get rid of that feeling of loneliness.”

Exemplary Answers for Leila’s Vicious Circle

- *Pleasant feelings*: joy, content, optimism, sense of belonging, sympathy, trust
- *Negative consequences*: little contact with friends/peers, no “real” friends, does not learn how to approach others, is excluded by others, little motivation to strive for real friends, self-efficacy beliefs, and self-esteem diminish
- *Unpleasant feelings*: loneliness, sadness, guilt, dissatisfaction, anger, social anxiety, insecurity, worries

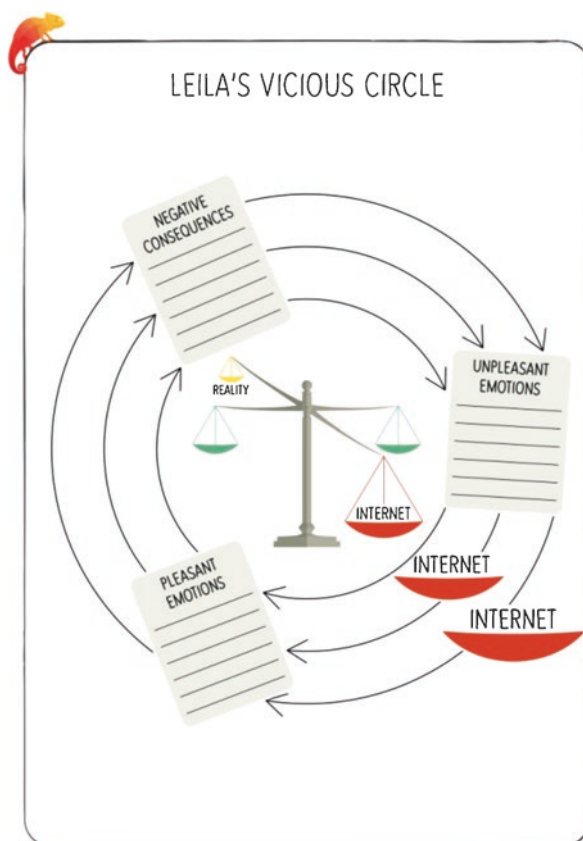


Fig. 8.4 Leila's Vicious Circle (WS 3.2)

With the help of Leila's vicious circle, the Ps understanding of Internet use as a dysfunctional coping strategy is deepened. The vicious circle exercise shows that dysfunctional and intense Internet use can end in the dichotomous experience of a negative real world and a positive virtual world in the long run. As in module 1 and module 2, the Ps must actively question whether a specific behavior is functional or dysfunctional and whether it ends in a vicious circle of avoidance, compensation, and loneliness.

Now, the group will conduct a social competence training, which serves as psychoeducation. It shows how the establishment of new friendships can be facilitated and deals with the issue of sending out negative affective signals. This chapter conveys that while making new friends is a challenge in general, one's personal behavior plays a crucial role for its success. What is meant by appropriate behavior and how it can be put into practice is explained in the following.

Training of Social Competence (Hinsch & Pfingsten, 2007)

Many people have trouble approaching people they don't know. You expose yourself to a certain risk since you don't know the other person and can't know how they will react. That is why people often approach others hesitantly and why one's voice might not be as strong as usual. I'm sure you have experienced this sort of situation before.

The inconvenient part of this is that our fear and insecurity are often visible to others. This is because we send out so called emotional signals. Sometimes, our fear and insecurity become so strong that we start behaving awkwardly: We stutter, fall silent, or try and hide our insecurity by becoming defiant and snappy. Unfortunately, this can appear off-putting to others. Therefore, it can be advantageous for us to pay attention to our language, our body language, and our facial expressions.

Before we go and talk to someone we should think of what we want to say. It is also important to wait for a suitable moment to speak to someone. When we are speaking, we must speak clearly. Furthermore, we should always give our opposite a chance to speak and let them finish their sentences without interrupting them. Friendliness is also important. You would probably prefer speaking to someone who approaches you with a smile and an upright posture and who looks at you while talking rather than someone who is sad, angry, or scared and who keeps turning away from you or looking at the floor, wouldn't you?

Communication signals that one should pay attention to during contact with others

- *Speech Content:*
 - Think of what one wants to say in advance.
 - Wait for a suitable moment (this also means not interrupting other conversations).
- *Formal Speech:*
 - Speak loudly and clearly.
 - Speak slowly.
 - Finish one sentence before starting the next one.
 - Let others finish their sentences.
- *Facial Expression:*
 - Friendly, relaxed facial expression.
- *Body Language:*
 - Approach someone with an upright posture.
 - Look at one's conversation partner.
 - Use one's hands for clarification (avoid nervous fidgeting!).

8.5 Identifying and Restructuring Unfavorable Cognitions

8.5.1 Reality Check

This exercise deals with dysfunctional cognitions and their influence on our emotions and behavior (Schlarb, 2012). By applying it to Leila's case example, the Ps consolidate their knowledge on identifying misconceptions and reshaping them into more helpful evaluations. The exercise emphasizes the importance of individual evaluations of a situation for our emotional experience.

The first two modules introduced “demandingness thoughts” and “overgeneralized thoughts.” Leila's case example focuses specifically on “catastrophizing thoughts.” This error in reasoning is characterized by people's tendency to perceive the negative aspects of a situation in an exaggerated manner and to excessively anticipate and think about possible negative consequences.

Reality Check

“Leila feels lonely and is afraid to approach other people. When she tries to talk to someone, she behaves very awkwardly. Why does Leila feel so bad?”

Leila has many negative thoughts that pull her down and give her unpleasant feelings. Her negative feelings arise from her negative thoughts. As you already know, these negative thoughts are called “downers”, because they give you bad feelings. They are not helpful, and, in most cases, they aren't realistic, either.

There are different types of downers. You have already heard about the demandingness downers and the overgeneralization downers in the cases of Toni and David. Can you remember how they can be identified?

Demandingness downers can be identified by the words “*must*” or “*have to*” and contain unrealistic expectations, which cannot be fulfilled in most cases. Because of this, they often make us feel frustrated and disappointed. Overgeneralization downers can be identified because they contain words such as *everybody*, *always* or *nobody*. They make you believe that something is always a certain way, just because you have experienced it that way once or a few times. Consequently, we feel unnecessarily worried, even though we can't even know whether things will actually turn out that way.

For Leila, the so-called “catastrophizing downers” have also joined the team. They are called catastrophizing downers because they always make us assume that everything will be absolutely awful, even though we can't even know that for sure yet. They make us panic, even though it might be completely unnecessary. You can identify a catastrophizing downer because it contains words such as *awful*, *terrible* or *catastrophe*. Do you remember the trick of how to spot and stop owners so they can't pull us down any further?

The trick is called reality check. Let us have a look at which downers we can spot in Leila's case. Take note of demandingness downers (they contain the



Fig. 8.5 Symbol for Reality Check (TS 1.3)

words *must* and *have to*) as well as of overgeneralization downers (they contain the words *always*, *everyone*, *definitely*, *impossible*, *everybody*, *no one*) and catastrophizing downers (they contain the words *awful*, *terrible*, *catastrophe*)."

"Do you think Leila's expectations are realistic? Which alternative thoughts could be more realistic and more helpful and could make her not feel as bad anymore?"

The trainer sheet "Reality Check" (TS 1.3; Fig. 8.5) is pinned to the blackboard. This is meant to visualize the technique of cognitive restructuring.

In the following exercise, Leila's downers are gathered in the group and written on the blackboard. The Ps are given the worksheet "Leila's Reality Check" (WS 3.3) to note down the ideas. Afterwards, these thoughts are questioned and checked for their realistic merit. The Ps are meant to realize that downers are distorted and unrealistic thoughts.

Now, the Ps should come up with alternative, more helpful thoughts that are more realistic and which can make Leila feel better.

By the end of the exercise, all Ps have understood that a person's evaluation of a situation varies between individuals and that these evaluations influence our affective experience and our behavior. People with social insecurity are often characterized by distorted patterns of thought including many catastrophizing thoughts. Each P is now able to apply the technique of cognitive restructuring to catastrophizing thoughts and thus identify and reformulate Leila's catastrophizing thoughts (WS 3.3 and Fig. 8.6; TS 3.1 and Fig. 8.7).

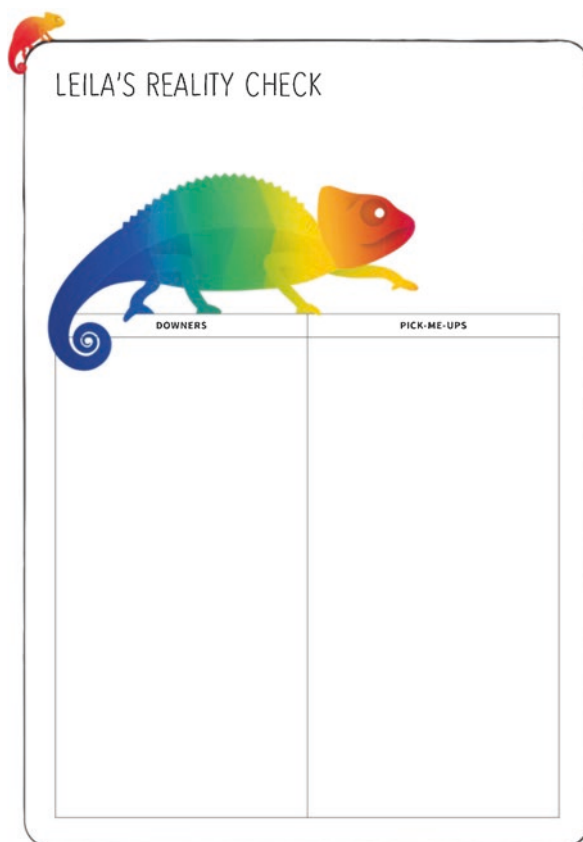


Fig. 8.6 Leila's Reality Check (WS 3.3)

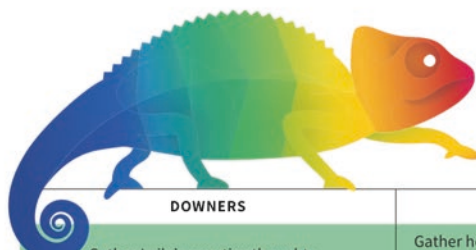
8.5.2 *Thought Stopping*

After having completed the reality check, the Ps are reminded of the thought stopping exercise. It is a helpful strategy to turn downers into pick-me-ups. For the sake of visualization, the trainer sheet "Thought Stopping" (*TS 1.5*) is pinned to the blackboard (Fig. 8.8).

In the last two sessions, you learned a second trick which helps you fight downers. Who can still remember it? Thought stopping is an exercise in which you tell yourselves: Stop! I will not continue to think this way! This idea is unrealistic, and it only pulls me down. I will try and find a more helpful and more realistic thought that will make me feel better again.



LEILA'S REALITY CHECK



DOWNERS	PICK-ME-UPS
Gather Leila's negative thoughts.	Gather helpful thoughts that could disconfirm Leila's worries.
"It's awful, nobody wants me to come along."	"It's sad that I have the feeling of not being part of the group. But maybe I should just start actively trying to look for friends?"
"Everyone has friends but me! That's so horrible!"	"Maybe I don't have as many friends as others. But I will do my best to find friends."
"Yes, Sara must become my new friend, she is my only chance!"	"It would be nice if Sara would become my friend, but if she doesn't, there are other nice girls in my class, too."
"How awful, she didn't even notice me! But no one ever notices me anyway."	"She doesn't seem to have noticed me. Maybe I should make a more energetic appearance next time."
"I always blush when I'm nervous, it's so embarrassing! I'm feeling hot already. And in the end, they'll all laugh at me. I'll never find friends like this!"	"I sometimes blush when I'm excited, but that's normal, it happens to others as well. I'll just take a deep breath first and then I'll go and talk to Sara!"
"How dreadful! Everybody gossips about me anyway."	"I seem to have disturbed the group in their conversation – maybe they wanted to talk about something private."
"Oh no, oh no! How awful, nobody is answering!"	"Nobody is responding. Maybe I didn't phrase my question clearly enough and they didn't understand what I wanted."
"Nobody likes me!"	"They don't seem to like me. Maybe they just don't like new members in their clique. But I'm sure there are others who will like me. I just have to continue actively approaching people, then it will surely work out at some point."

Fig. 8.7 Leila's Reality Check – Solutions (TS 3.1)



Fig. 8.8 Symbol for Thought Stopping (TS 1.5)

8.6 Problem-Solving Skills and Behavior Activation Training (Change Plan)

The change plan for Leila trains the Ps' problem-solving skills. The trainer sheet "Change Plan" (TS 1.6; Fig. 8.9) is pinned to the blackboard.

As in the first two modules, the change plan takes place in two steps. First, Leila's current behaviors are assessed in form of a problem analysis. For this, the group should work out the everyday activities that cause her social insecurity and avoidance as well as the activities that lead to positive feelings and relaxation. The trainer

Change Plan: (a) Problem Analysis

"We have been looking at Leila's feelings and thoughts for quite a bit. Now let us have a look at how she behaves and whether she could behave differently. Which situations make Leila feel socially insecure and when is it hard for her to muster her courage and approach others?"

Possible answers: When she

- Wants to talk to someone.
- Wants to get to know someone new.
- Can be watched by others.
- Stands in front of other people.
- Has to say something and the others are completely silent.

Trainer: "In which situations do these unpleasant feelings not occur?"

Possible answers: When she

- Is already familiar with people and can be sure that she will get along with them.
- Can't be seen by others (for example in a chat).

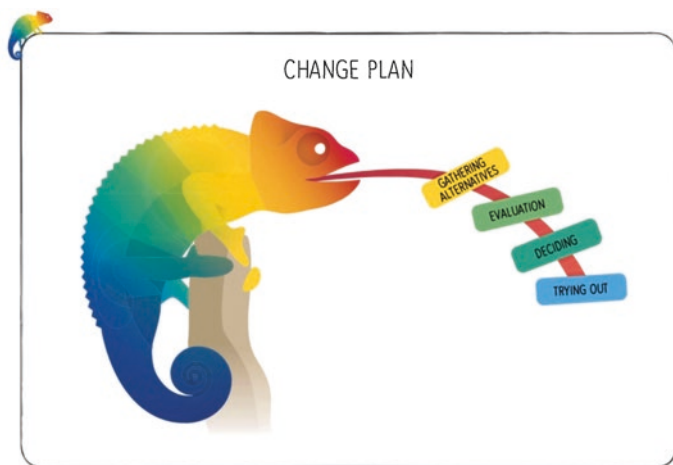


Fig. 8.9 Symbol for Change Plan (TS 1.6)

goes through the story with the Ps, gathering the answers to the following questions: *In which situations is Leila socially insecure and when does she have trouble overcoming her inhibitions to approach others? In which situations does Leila show less social insecurity and when can she conquer her anxiety and approach others?*

Next, the worksheet “Leila’s Change Plan” (WS 3.4; Fig. 8.10) is handed out. In the first column, Ps should write down four alternative behaviors for Leila. Possible solutions can be found on the trainer sheet “Leila’s Change Plan (Solutions)” (TS 3.2; Fig. 8.11).

Afterwards, the advantages and disadvantages of every alternative behavior are collected on the blackboard and written down in columns two and three of the worksheet. The Ps should choose the best alternative for Leila by marking it with a cross in the chart.

Change Plan: (b) Problem-Solving Training

Please think back to the chameleon from the previous sessions. You may remember that it can adapt and change its color depending on the situation. It can hold still and observe for a long time, but it can also move in the fraction of a second and catch prey with its slingshot-like tongue.

Just as David and Toni were able to adapt in the last two sessions, it is now Leila’s turn to change and try new things. Create a clever change plan for Leila, following these three steps:

1. What else could Leila do to find friends instead of just chatting to virtual friends on the Internet? Gather ideas and write them down!
2. Which advantages and disadvantages do these different possibilities have?
3. It is now important to make a decision and give the chosen alternative a try.



LEILA'S CHANGE PLAN				
GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
Leila's alternatives to using the Internet / playing computer games	Advantages	Disadvantages	Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?

Fig. 8.10 Leila’s Change Plan (WS 3.4)



LEILA'S CHANGE PLAN				
GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
Leila's alternatives to using the Internet / playing computer games	Advantages	Disadvantages	Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?
1. Make another attempt to make friends at school the next day in a different situation	• Potential revision of yesterday's failure • A positive feeling towards your classmates and school	• You could make a fool of yourself • It might not work	X	
2. Find a hobby that allows you to meet other people, e.g. a sports club	• People you share interests with • Other people approach you without bias • New people who are also looking for friends in the new group • Enjoyable new hobby • Possibly positive experiences and reduction of fear during confrontation/starting a conversation with people	• Lots of foreign people • Takes a lot of courage • It might be hard to find your way into in a preexisting closed community		
3. Engage in voluntary activities or find a part-time job	• Common topics with new people • Fulfillment and happiness • Possibly positive experiences and reduction of fear during confrontation/starting a conversation with people • Other people approach you without bias	• Time-consuming • Colleagues often like to separate work from private issues		
4. Meet your friends from the chatrooms in real life	• Testing a pre-existing friendship in real life • Low probability of being rejected, as one already knows each other	• Virtual friends might not be as nice in real life • Virtual friends might turn out to be different than expected (e.g. not your age) • It might be dangerous to meet strangers, you should inform an adult about your appointment or bring a friend		
5. Confrontation: not running away from unpleasant situations, trying to settle the situation/problem directly	• It might turn out that the other person's reaction was a misunderstanding • The opposite might be impressed by the other person's courage and will to settle the dispute	• Another person might not be prepared to settle the dispute • You might be too nervous and behave awkwardly		

Fig. 8.11 Possible Solutions for Leila’s Change Plan (TS 3.2)

Now, the worksheet “My Change Plan for Friendships” (WS 3.5; Fig. 8.12) should be handed out. The Ps should note down three possible alternatives which could help them make new friends or foster already existing friendships. One of the three alternatives should be tried out at home until the next session.

My Change Plan for Friendships

What could you do to make new friends or to foster already existing friendships? Let us gather ideas together.

Now note three possible behavior alternatives into your change plan and decide on one alternative that you want to try out until next week.

After deciding on an alternative, it is important to try it out and to evaluate its success. This exercise teaches Ps new problem-solving skills, and how to generate, evaluate, and put alternative behaviors into practice when social anxiety strikes.

8.7 Homework and Conclusion

8.7.1 Homework

First, the Ps should try out their alternative of choice and document their experience. If time allows, have each P present the alternative they chose. Second, the Ps should reflect on their own vicious circle. For this, hand out the worksheet “My Vicious Circle” (WS 3.6; Fig. 8.13).



MY CHANGE PLAN FOR FRIENDSHIP

GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
My alternatives to using the Internet / playing computer games	Advantages	Disadvantages	Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?

Fig. 8.12 My Change Plan for Friendship (WS 3.5)

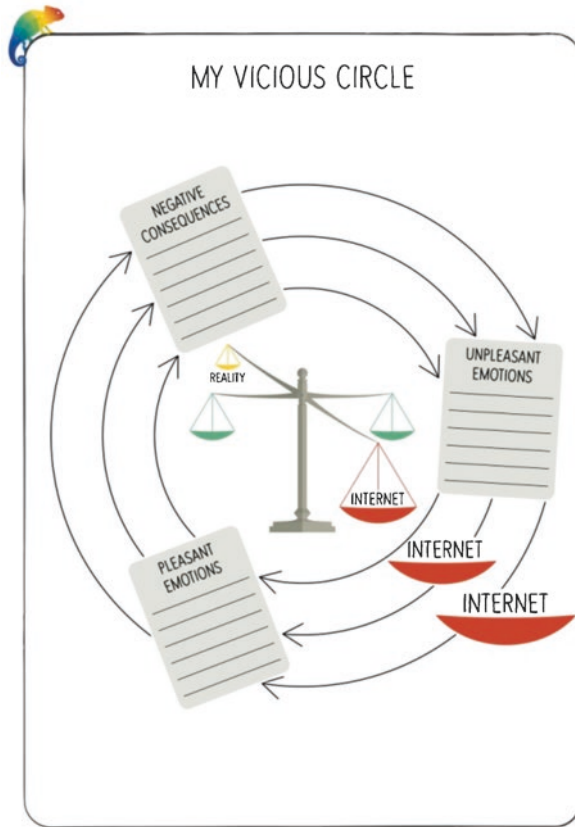


Fig. 8.13 My Vicious Circle (WS 3.6)

Homework

For your homework, please choose one alternative from your personal change plan for friendship and give it a try until next week. Keep in mind that it is important to check whether it is working and whether it helped you combat your performance anxiety or procrastination.

The second task for your homework is to think about your own vicious circle (see WS 3.6).

8.7.2 Conclusion

In a flashlight exercise, each P should answer the following questions in one sentence: *What do I take home from this session? How has my view of Internet use and video games changed? How will I implement my change plan this week?*

Finally, the trainer dismisses the group.

References

- Hinsch, R., & Pfingsten, U. (2007). *Gruppentraining sozialer Kompetenzen. GSK ; Grundlagen, Durchführung, Anwendungsbeispiele* (5., vollst. überarb. Aufl.). Weinheim: Beltz PVU (Praxismaterial).
- Schlarb, A. A. (Hg.) (2012): *Praxisbuch KVT mit Kindern und Jugendlichen. Störungsspezifische Strategien und Leitfäden ; mit Online-Materialien* (1. Aufl.). Weinheim: Beltz.

Chapter 9

Module 4: Emotion Regulation



9.1 Session Procedure

Homework Evaluation (10 min):

- My Change Plan for Friendships
- My Vicious Circle

Psychoeducation (35 min):

- The Star of Emotions
- Why Do We Need Emotions?
- Which Functions Do the Different Emotions Have?
- What Characterizes Various Emotions?

Strategies for Emotion Regulation (45 min):

- Functional Emotion Regulation Strategies – The Box of Tricks
- Emotion Regulation Strategies as a Practical Exercise

9.2 Material (Available Online)

- Worksheet (WS) 4.1: The Star of Emotions
- Worksheet (WS) 4.2: Chameleon's Box of Tricks
- One printed out Chameleon for each P
- From Module 1: Trainer Sheet (TS) 1.2: The Chameleon
- Trainer Sheet (TS) 4.1 a: Toni is Bored – Signals for Emotions
- Trainer Sheet (TS) 4.1 b: David has the Jitters – Signals for Emotions
- Trainer Sheet (TS) 4.1 c: Leila is Looking for Friends – Signals for Emotions
- Trainer Sheet (TS) 4.2: The Star of Emotions
- Trainer Sheet (TS) 4.3: The Functions of Emotions (for cutting out)

- Trainer Sheet (TS) 4.4: Box of Tricks (for cutting out)
- Trainer Sheet (TS) 4.5: Emotion Regulation Strategies (for cutting out)
- Trainer Sheet (TS) 4.6: Tricks – Instructions

9.3 Welcome, Revision, Homework, and Session Goals

The Ps are welcomed, the previous sessions are briefly revised, and the homework is discussed. Then, the procedure and goals of the current session are presented. As Ps are not required to take notes during this module, it is practiced in a chair circle.

Welcome and Checking Homework

During the last three sessions, you've met Toni, David and Leila. We found out why they spend so much time on the Internet.

Your homework for today was to try out an activity from your personal change plan. How did you get along with your change plan last week? Did it work? Did you give it a try? Did you enjoy yourselves? Was it hard? Would you choose your alternative again? Who would like to tell us about their experience?

As a second assignment, we asked you to reflect on your own vicious circle and write down your personal unpleasant feelings in the real world, pleasant feelings you experience when being online, and negative consequences that might result from your Internet use.

Internet During the past 3 weeks, we have learned different tricks to question and alter Toni's, David's and Leila's thoughts and behavior. Maybe you've already noticed that these tricks always focus on the person's emotions. At the beginning of their stories, all three protagonists are dealing with different problems which lead to unpleasant feelings in the real world. Being on the computer makes them feel better at first. Because they spend so much time on the Internet, however, they don't solve their real-life problems which leads to negative consequences and unpleasant feelings. Today, we are going to have a closer look at David's, Toni's and Leila's emotions. Furthermore, we will learn a couple more tricks to deal with unpleasant emotions.

With the help of the following grid, the Ps should assess the success of their individual change plans. This grid can be used as an orientation to discuss the homework assignment "My Change Plan for Friendship" (Fig. 9.1).

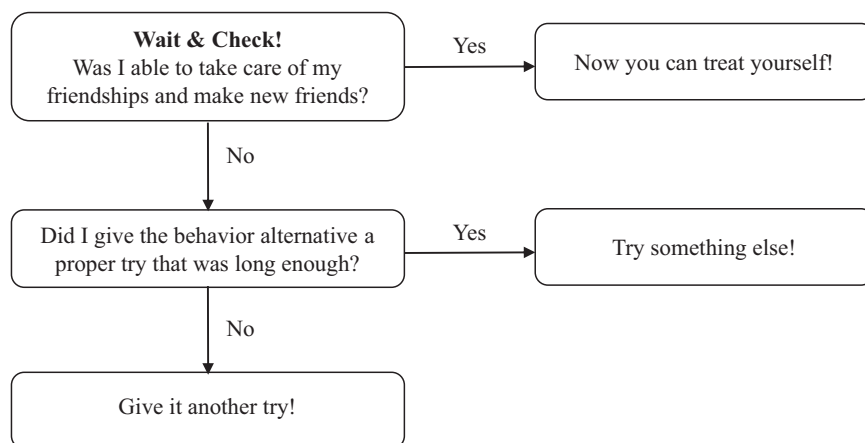


Fig. 9.1 Grid to Review the Success of an Alternative Activity

9.4 Psychoeducation for Emotion Regulation and Internet Use Disorders

9.4.1 *The Star of Emotions*

The star of emotions (Stavemann, 2005) introduces the topic of *emotion regulation*. The trainer should draw the blank star onto the blackboard, only labeling the main emotions in its corners.

As another blackboard panel will be used during psychoeducation, we recommend splitting a large blackboard into two halves. One half is used for the star of emotions, and the other is used for the “Analogy of chameleon colors and feelings” task. Both blackboard panels should be visible during the entire session.

During psychoeducation, it is advised to continually add information on Internet use disorder and feelings on the panel. After the exercises, the blackboards can be used to refresh the Ps memory.

Together with the Ps, the blank star of emotions should be filled out with different emotions. The three case examples are a great starting point to come up with different emotions. The exercise “the satellite” helps the Ps to observe the protagonist’s emotions.

9.4.2 *The Satellite*

The satellite is a self-monitoring exercise that serves the observation and understanding of one’s own emotional state (Schneider & Margraf, 2009). All one’s attention should be shifted to one’s inside. During this exercise, the emotional state is

captured by an imaginary internal satellite. With the help of this satellite, four levels of emotion are to be observed:

1. Cognitive aspects of emotion,
2. Physiological aspects of emotion,
3. Quality of the feeling that arises (what kind of feeling),
4. Behavior that follows that feeling.

The focus lies on the awareness of one's current state and the identification of its emotional cause. The satellite can be considered a mindfulness technique, as it requires a special form of attention toward one's body, perceptions, and soul. In this context, however, we describe it as a self-monitoring strategy, as the focus lies on the holistic perception of an emotion and the identification of its causes by self-observation.

For this exercise, the Ps are divided into three groups. Each group should take the perspective of one of the three protagonists from the case examples. The Ps are instructed to pay close attention to how the protagonists feel before and after having spent time on the Internet (emotional signals). Possible solutions can be found on the respective trainer sheet (*TS 4.1a*, *TS 4.1b*, *TS 4.1c*).

The exact instructions for the execution of the satellite exercise can also be found on the trainer sheet "Trick Instructions" (*TS 4.6*). During this exercise, it is important that the Ps do not extrapolate from their own person, but that they put themselves in the position of the protagonist. Let the Ps retell the stories in their own words to refresh their memory.

After the exercise, gather the emotions and write them down in the fitting position in the star (relative to the main emotions). The Ps should be asked how the protagonists feel before and after being on the Internet, focusing on the change in their emotions. During this exercise, it is also possible to name feelings that do not come up in the short stories.

Satellite Exercise

Who can give us a short summary of the three stories? [...]

[P's name], imagine you are Toni, who is bored and who doesn't know what to do with his day.

[P's name], imagine you are David, who is afraid of his Math test and thus puts off revision.

[P's name], imagine you are Leila, who is afraid of approaching people her age.

Now close your eyes and observe what is going on inside of you! Imagine floating around like a satellite and watching your feelings from afar. **IMPORTANT:** The satellite is a silent observer, who *does not* judge and *does not* comment. It observes very thoroughly and asks questions to help you get to know and understand yourself better:

Imagine you are the person from the story. You've just come home from school and you had a bad day. Ask yourself the following questions:

How am I feeling right now?

Which thoughts are on my mind? Can I identify downers?

What is the feeling doing to my body? Is my heart beating faster, do I have a tingling in my stomach, a lump in my throat? Am I nervous, cramped up, or tense? Do I have shaky hands? Am I blushing?

What would I like to do right now?

What are the emotions I am experiencing called?

Now open your eyes again! Let's gather these emotions on the blackboard. What did Toni feel? How about David and Leila?

As you can see, the star of emotions has eight points. There's a word written on every spike: Anger, fear, sadness, shame, love, happiness, pride and dislike. These are the eight main feelings. Therefore, each spike symbolizes one feeling. Let's gather all feelings that are close to anger on the anger-spike, all feelings that are similar to happiness on the happiness-spike and so on.

Now close your eyes again! Imagine you are the person from the story and you're going online. This is where you do what you like most. Ask yourself these questions:

How am I feeling right now?

Which thoughts are on my mind? Can I identify downers?

What is the feeling doing to my body?

What would I like to do best right now?

What are the feelings that I am experiencing called?

Now open your eyes again! Let's gather these feelings on the blackboard. What did Toni feel? How about David and Leila?

One possible solution for the star of emotions can be found on the trainer sheet "The Star of Emotions" (*TS 4.2*; Fig. 9.2). The trainer sheet comprises emotions from the short stories, which are sorted by similarity. It is handed out to the Ps after the exercise (*WS 4.1*).

Satellite Exercise: Solutions

Toni: dissatisfaction, boredom, enthusiasm, admiration, disappointment, anger, dejection, joy, shock.

David: fear, anger, disappointment, helplessness, enjoyment, pride, apathy, happiness, frustration.

Leila: loneliness, sadness, insecurity, fear, embarrassment, shame, happiness, security, group affiliation, appreciation, attention, trust.

This exercise teaches the Ps how multi-faceted and situative our emotional experience can be. Ps learn what emotions arise before and during Internet activity and how an intensive Internet use that might appear to be a functional emotion regulation strategy at first turns into dysfunctional strategy in the long run.

9.4.3 Why do we Need Emotions?

After all Ps have worked out the definition of emotions, their general functions are discussed. For this, the blackboard design with the star of emotions (Fig. 9.2) is extended to include the relative functions of the emotions.

This session conveys that emotions are useful because they show us how to behave adequately in a certain situation. Emotions do not occur without a reason, but rather refer to a situation or an event. Emotions possess an activating component that leads to a specific behavior contributing to an adequate reaction to the event.

9.4.4 Which Functions do the Different Emotions Have?

This section focuses on the specific functions of each main emotion, which can be found in the following table. The Ps should work out the functions with the help of the case examples and their own experience (Table 9.1).

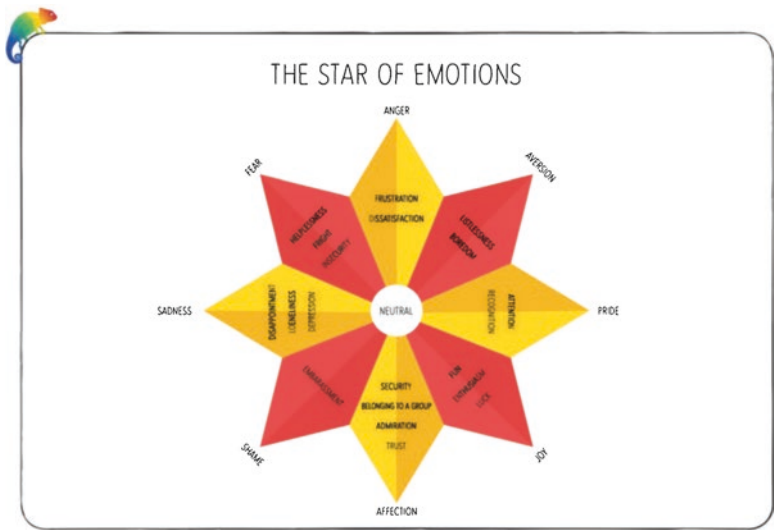


Fig. 9.2 The Star of Emotions (TS 4.2)

Table 9.1 The Eight Main Emotions and their Specific Functions

Emotion	Specific function
Fear	Protect yourself!
Sadness	Comfort yourself!
Shame	Withdraw! Make up for it!
Affection	Get into contact!
Joy	Enjoy it!
Pride	You did well! Keep it up!
Aversion	Let it be! Get rid of it!
Anger	Defend yourself!

For the sake of visualization, the star of emotions is extended to include these functions. The trainer sheet “The Functions of Emotions (for cutting out)” (*TS 4.3*) can be found in the Appendix. The functions can be cut out and pinned to the matching main emotions on the star. It might be a good idea to hand out the functions to the Ps and let them pin them onto the star. Figure 9.3 shows the full blackboard design.

Star of Emotions Exercise: Functions of Emotions

As you can see, we have come across quite a few different emotions in the stories. You asked yourselves how you were feeling in that moment, which thoughts were coming to your mind, what a certain emotion does to your body, and what the emotions were called. Furthermore, you asked yourselves what you would like to do most in that moment. Maybe you noticed that every emotion wanted to tell us something different. Feelings have a specific function: They tell us how we should behave. Today we brought these functions with us and have prepared an exercise for you. Each one of you will get one functions of a feeling. [These are handed out.] After everyone has read their function aloud, we will decide which function fits which emotion best.

Imagine you are scared. What would you like to do most? What does this feeling want to tell you? Does anyone have a function that could fit fear?

Fear is telling you to protect yourself!

We need feelings to know how to behave correctly in different situations. They are essential for our survival.



Fig. 9.3 The Function of Emotions (TS 4.3)

9.4.5 Which Characteristics do Emotions Have?

The characteristics of emotions are interactively explained to the Ps. For this, the blackboard picture of the chameleon should be pinned to the blackboard (blackboard picture “The Chameleon”; TS 1.2; Fig. 6.6). The chameleon’s colors are compared to the characteristics of emotions.

The similarities are listed in the table below and should be worked out in the group. For each one of the chameleon’s colors, the Ps should think about the matching properties of emotions (Table 9.2).

Chameleon Exercise: Characteristics of Emotions

Our emotions are part of us just like these colors are part of the chameleon. Emotions are always there, just like the chameleon always has a certain color. Let’s have a look at how exactly this works:

Which parts of the chameleon are colorful?

That’s right—a chameleon is colorful everywhere! And it’s the same with our feelings: They can occupy our whole body.

How about the color itself? Is it always the same?

No, it changes! We have a multitude of emotions and they can change as well!

When does the chameleon change its color?

Depending on the situation, the color changes to match its surroundings. It’s exactly the same with our emotions.

Table 9.2 Analogy of Chameleon Colors and Feelings

The chameleon’s color...	Emotions are inner states, that...
...is always present (it is always colorful)	...are always existent (you always feel something)
...spreads across the entire chameleon	...spread across the entire person
...can change	...can be changed
...is a result of external circumstances	...are triggered by specific situations

9.5
Emotion Regulation Strategies

9.5.1
Functional Emotion Regulation Strategies

Now, the Ps are introduced to the concept of emotion regulation. Emotion regulation is a broad term that summarizes every attempt at influencing one’s expression and experience of emotion. The influence can be aimed at the quality, the intensity, and the duration of the emotion (Gross, 1998). Emotion regulation encompasses a wide spectrum of strategies by which one can influence these aspects.

Emotion regulation strategies can be categorized as more functional or dysfunctional. Functional strategies are those with which unpleasant emotions can be regulated effectively. Dysfunctional strategies regulate unwanted emotions ineffectively or even counterproductively (Barnow, 2012). An example of a dysfunctional emotion regulation strategy is excessive Internet use. Even though it regulates negative emotions at first, it leads to a worsening of issues in the real world in the long term. Functional strategies that serve as alternatives to Internet consumption are now introduced and practiced.

Emotion Regulation

Toni, David and Leila try to suppress negative and unpleasant feelings by going online, which is a very common reaction. Everybody wants to counter-balance or even get rid of unpleasant feelings. There are helpful and less helpful strategies to do that. Distracting oneself by going online or playing computer games is just one of many possibilities. Unfortunately, it can lead to even more problems in the long run. Luckily, there are many tricks for dealing with unpleasant feelings. You have already heard about some of them. Today we will show you three more tricks that you can use to make you feel better again when your negative feelings occupy your body, for example if you are shaking or blushing.

9.5.2 The Box of Tricks

The functional strategies introduced in this chapter belong to the group of imaginative, sensory relaxation, and mindfulness techniques. In the following table (Table 9.3), the strategies are sorted by type of approach.

To offer a better overview of the tricks, a third blackboard design is drawn up (see Fig. 9.4; WS 4.2). The individual cut-out elements can be taken from the trainer sheets “Box of Tricks (for cutting out)” and “Emotion Regulation Strategies (for cutting out)” (TS 4.4 and 4.5).

In accordance with the previously introduced cognitive behavioral therapy techniques (reality check, thought stopping, change plan, and satellite), three relaxation- and mindfulness-based techniques are practiced. The first technique (inner safe space) is an imaginative relaxation technique, the second technique (progressive muscle relaxation, PMR) is a sensory relaxation technique, and the third technique (gummy bear exercise) is a mindfulness-based relaxation technique.

Sensory and imaginative relaxation techniques show similar psychological and physiological effects. The main effects can be seen in the onset of subjective well-being, inner calm as well as heaviness and warmth that spread through the extremities (Schneider & Margraf, 2009).

Mindfulness exercises, for example the gummy bear exercise, allow Ps to consciously concentrate on things. They help loosen entrenched emotional reaction patterns by putting mindfulness between stimulus and reaction like a buffer. The gummy bear exercise helps the Ps realize that they are not at the mercy of certain events but that they are aware and can self-determinedly react to stimuli, such as dysfunctional thoughts, in an adequate way.

9.5.3 Training of Emotion Regulation

The instructions for the emotion regulation strategies can be seen in the following example as well as on the trainer sheet “Trick Instructions” (TS 4.6). The Ps are provided the box of tricks, including all instructions (Worksheet “Chameleon’s Box

Table 9.3 Relevant “Tricks” with their Respective Type of Approach and their Technique (Schneider & Margraf, 2009; Payk & Brüne, 2013)

Name	Type of Approach	Technique
Reality check	Cognitive techniques	Cognitive restructuring
Thought stopping		Self-control technique
Change plan		Problem-solving training
Satellite		Self-observation
Inner safe place	Relaxation techniques	Imaginative relaxation technique
PMR		Sensory relaxation technique
Gummy bears		Mindfulness exercise



Fig. 9.4 The Chameleon's Box of Tricks (WS 4.2)

of Tricks,” WS 4.2). It might be useful to have Ps sit in a circle with the backs to each other, as this makes concentrating only on oneself easier.

Box of Tricks

As you have already learned in the last few sessions, the chameleon is a skillful transformation artist, who has gathered an entire box full of tricks to alter your emotions.

Which tricks do you know that help to battle unpleasant feelings?

[Pin box with tricks 1–4 on blackboard.]

These are the tricks you have already heard about. Today we will practice some new tricks to help you deal with unpleasant feelings.

[Now pin trick 5 on the blackboard]

The Inner Safe Place (Reddemann, 2017)

We will start with the first new trick: The inner safe space. This exercise is particularly well suited for times in which you are sad or downhearted, and you feel like no one can comfort you. The trick also works well for situations in which you are troubled by fears that are so bad that you don't want to talk to anyone about them. The inner safe place provides you with security and comfort. This place is in your fantasy. You will think of a place where you feel very comfortable. You will be able to come back to this place whenever you like, for example in a difficult situation or when you need to recover from everyday stress. You will probably feel a lot more relaxed and calm after returning from this safe place.

[read aloud]

I would now like to invite you to get to know and shape your personal inner safe place. To do so, please find a position that is comfortable for you and in which you feel relaxed. Now, close your eyes and breathe in and out slowly and calmly. Focus only on yourself. Just let noise and other disturbances happen and pass on. It is okay if you aren't able to do so immediately. Do you feel ready? Slowly set out for your personal, inner safe place.

This place can be on earth, but it doesn't have to be. It can also exist entirely in your imagination. Let your fantasy and your thoughts roam free and just try to let yourself float a bit. You are standing at a place where you feel safe and comfortable. This place belongs only to you. Of course, it is your free choice to invite other beings to this place. These could be animals, people, or even completely different beings. You may also invite beings that only you might be able to see in your fantasy. I would advise you to only invite loving companions and helpers, though. Beings who support you and who give you love.

Now examine your personal place with all your senses.

What can you see? Is it pleasant? Do you feel comfortable with what you're seeing? If there should be anything you don't like you are invited to make any changes you want.

What can you hear? Is it pleasant? Do you feel comfortable with what you're hearing? If you do not feel quite happy with what you're hearing yet, just change as many things as you like until they are pleasing to your ears.

You may move and choose a different sitting position that is comfortable to you. Again, you may make any changes that you like.

How does this place smell? Are the smells pleasant? Just as before, you can also change the smells in such a way that you are as comfortable and happy as possible.

Now, how does this place make you feel in general? Do you feel safe and sheltered? Do you feel like this place can help you in difficult situations? Would you like to return to this place? It is important for you to be able to

answer these questions with “yes”. Create and change your inner place of well-being whenever and however you wish. Everything is possible.

Now slowly open your eyes and focus your attention on the room again. You may return to this place whenever you wish. I will now distribute a little picture of the chameleon to you. It might be helpful to put the chameleon in your bag or purse, so that it will remind you of this place.

How do you feel? Did you find a place? When would you go to this safe place?

Progressive Muscle Relaxation (Jacobson, 1938)

[Pin trick 6 on the blackboard]

Next, you will learn a trick that can help you when you feel nervous, tense and stressed. The trick is called *progressive muscle relaxation*. First, you will flex your muscles as tightly as you can. You will hold the tension for a few seconds before letting loose. We will try this relaxation with different body parts.

[Read aloud]

Move into a position that is comfortable. Close your eyes. Try to keep your body as loose as possible and relax—your feet and legs, your stomach, your shoulders and your neck, your arms and your hands, and your head and face.

Now, concentrate on your feet and legs. Flex your legs, feet and toes as far as possible. All the other body parts should be relaxed while you are doing this. Imagine you are walking barefoot through a large, flabby mud hole. Feel the mud welling up between your toes. You must make sure to not slip and fall. Press your toes and heels into the ground. Do you feel how tense and hard your feet and legs feel? Now slowly relax again... Take a deep breath and feel the tension draining from your feet and legs. Can you feel how relaxed your legs and your feet are now? Allow this feeling of relaxation to sweep over you even more until your muscles feel soft again.

Now concentrate on your stomach. Imagine lying in the grass and hearing the bees buzz. Suddenly, a little elephant approaches you. It doesn't notice you laying in the grass and is going to step on you any second now. To be able to bear the little elephant's weight on your stomach, tighten your stomach muscles as hard as you can. Can you feel the foot and the weight of the little elephant on your stomach? Do you feel how hard and tense your stomach is right now? It's so hard that you can barely feel the little elephant walking over you. Now slowly relax your stomach muscles again. Take a deep breath and let the air stream into your stomach, until it's as round as a ball. Now slowly

exhale and feel the tension leaving your stomach together with the air. Your stomach muscles are growing softer and softer and you're feeling more and more relaxed while doing so.

Now focus on your neck and your shoulders. Imagine being a little turtle lying on the beach by the ocean. Suddenly, you sense danger and must quickly pull your head back into your shell. Pull your shoulders up as high as you can, until your head is in between them. Your shoulders are your protective shell for your head. Can you feel how tense your shoulders and your neck are? And how hard your muscles are working to protect your head? Has the danger passed? Then slowly come back out of your protective shell. Let your shoulders move downward gently and stretch your neck upwards carefully. Inhale deeply. Feel your muscles loosen. Feel your shoulders return to a relaxing position.

Do you feel relaxed? Now focus on your arms. Imagine you are a cat. You've just finished a comfortable midday-nap. Before you can go climbing up trees and hunting mice again, you want to stretch your front legs and paws. Stretch your arms upwards as far as you can make them go. How do your arms feel while you're doing this? When you feel like you've stretched enough, let your arms glide down again in a relaxed motion. Again, take a deep breath and exhale slowly and evenly. Do you feel your arm muscles gradually relaxing and loosening up again?

Now, stay relaxed and concentrate on your hands. Imagine you are holding a lemon in each hand that you want to press the juice from. Clench your fists until the juice runs down between your fingers. Can you feel the strength and the tension in your palms and fingers? How do your hands feel? Allow the feeling to wash over you and examine it as closely as possible. Have you pressed all the juice out of your lemons? Then slowly relax your hands again.

Now concentrate on your face. Imagine sitting in the sun. Maybe in a summery meadow or at home on the terrace or the balcony? Suddenly, a fly appears, lands on your nose, and tickles your face. You are now trying to scare the fly away by scrunching up your nose as hard as you can. You should also wrinkle your forehead and your chin. Has the fly gone? Oh no, it's landed on your lips! Press together your lips and your teeth so it has no chance to crawl into your mouth. Phew, finally, the fly is gone! This means you can relax your face again. Inhale again deeply and try to appreciate clearly how your entire face relaxes.

Tighten your whole body once more. Your feet, your legs, your stomach, your shoulders and neck, your arms and hands, and even your face. Count to three in your head and then relax your whole body. Inhale and exhale deeply three times.

Now, you may slowly open your eyes. How do you feel? Take some little time to come back to this room and to the people around you.

How do you feel? How does your body feel?

Gummi Bears (Raisin Exercise; Kabat-Zinn, 2010)

[Pin trick 7 on the blackboard]

Please think of Toni, David and Leila once again. Imagine each one of them opening a packet of *Gummi bears*. What would happen? Toni would probably devour his gummi bears while lying on the couch and playing with his phone. In no time, the packet would be empty, and he would not have even noticed he ate them. What would happen to Leila, how would it go with David? Would they notice what the gummi bears taste like?

Especially when one is stressed, it can be hard to concentrate on the current moment. Our thoughts are often somewhere else, and we don't realize what's going on around us. The following trick will help you become more aware of what's happening around you, for example what a gummi bear smells or tastes like. Today, we brought gummi bears for each of you.

[Read aloud]

Place the gummi bear on the palm of your flat hand. Now look at it from all sides. What does it look like? Which color is it? Is the surface more matt or shiny? What kind of shading does it have? Does it change when you hold it up against the light differently? How would you describe it to a blind person?

Now close your eyes and hold the gummi bear close to your nose. Take a thorough sniff. What do you smell? Does the smell or its intensity change?

Hold the gummi bear up against your ear and examine the sounds it makes. Can you even hear it at all? Or do you have to move it around for you to be able to hear something? How would you describe the sound? Listen carefully. First with the one, then with the other ear.

Keep the gummi bear in your hands. Now focus all your attention on your hands. Explore what the gummi bear feels like from all sides. Feel it between your fingers and describe the sensation. Is it smooth, rough, blunt or slippery?

Finally, put the gummi bear in your mouth and explore it with your tongue. What does it taste like? What does it feel like? Does its structure change over time?

Now place the gummi bear on your molar without biting down on it yet. Make a conscious decision to bite down on the gummi bear and chew it in slow motion. What does the gummi bear feel like now? Does the taste change?

Chew until the last bite. Prepare to swallow and observe in detail how you swallow it. Can you feel the swallowing motion? What does your tongue feel like after having swallowed?

Now open your eyes. You will now be given another gummi bear. Eat the second one just as you would usually eat a gummi bear. Compare your sensations with the eating process from before while doing so. Can you find differences?

What did you think of the exercise? Did you consciously perceive what the gummi bear tasted like? Did it taste different than usual?

9.6 Conclusion

After the exercises have been completed, all Ps are given the WS 4.2 (Fig. 9.4), which summarizes the tricks learned in the module. Discuss these with the group and clear up any questions. Afterwards, the group discusses what they have learnt in the last four sessions. Ps are also given the chance to provide feedback about the training.

We have now reached the end of our training. The last worksheet summarizes the tricks that we learnt today, so you can try the exercises at home. Finally, we would like to hear from you, what did you think of the training. Which tricks did you learn from PROTECT? How did you like your experience all things considered? What did you find particularly helpful? What would you like to improve?

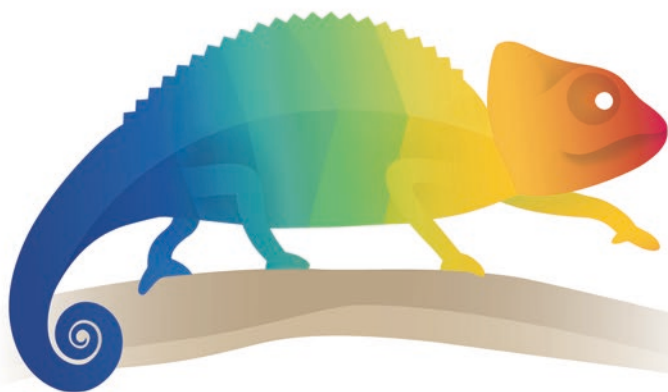
References

- Barnow, S. (2012). Emotionsregulation und Psychopathologie. *Psychologische Rundschau*, 63(2), 111–124. <https://doi.org/10.1026/0033-3042/a000119>.
- Gross, J. J. (1998). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology*, 74(1), 224–237.
- Jacobson, E. (1938). *Progressive relaxation* (2nd ed.). Chicago, IL: The University of Chicago Press.
- Kabat-Zinn, J. (2010). *Gesund durch Meditation: Das große Buch der Selbstheilung* (Vol. 17124, 9. Aufl.). Frankfurt am Main: Fischer-Taschenbuch-Verl.
- Payk, T. R., & Brüne, M. (2013). *Checkliste Psychiatrie und Psychotherapie: 121 Tabellen ; [inklusive App]. Checklisten der aktuellen Medizin* (6. vollst. überarb. Aufl.). Stuttgart: Thieme.
- Reddemann, L. (2017). *Imagination als heilsame Kraft: Ressourcen und Mitgefühl in der Behandlung von Traumafolgen. Leben lernen* (Vol. 141, 20. Aufl.). Stuttgart: Klett-Cotta.
- Schneider, S., & Margraf, J. (2009). *Lehrbuch der Verhaltenstherapie*. Berlin: Springer. <https://doi.org/10.1007/978-3-540-79545-2>.
- Stavemann, H. H. (2005). *KVT-Praxis: Strategien und Leitfäden für die kognitive Verhaltenstherapie*. Beltz: Weinheim.

Appendix

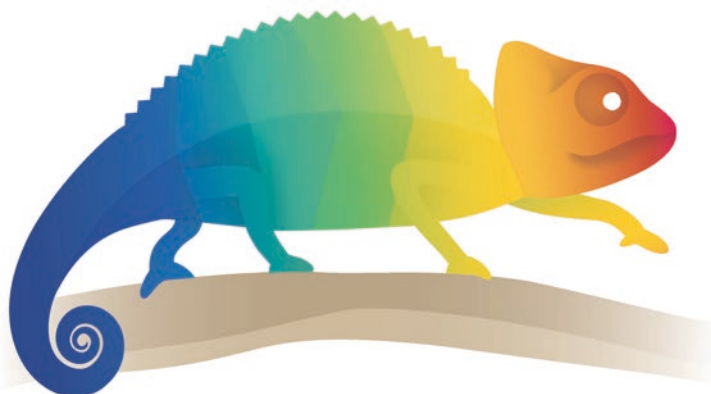


TRAINER SHEETS





WORKSHEETS





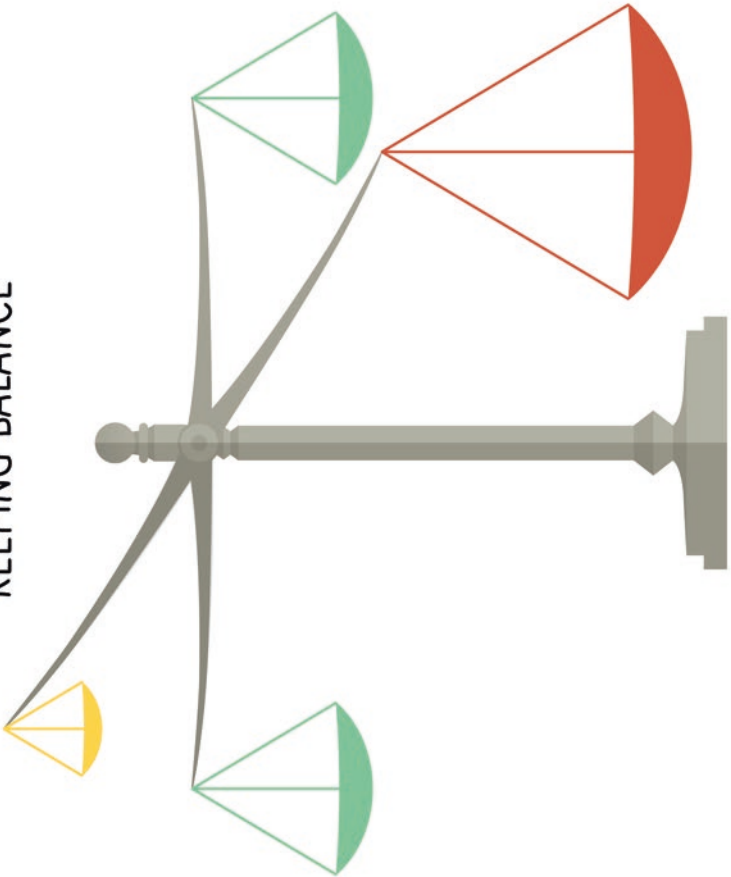
PROTECT - MODULES OVERVIEW

Now, you will get an overview of all four modules including the content of each session and the dates when we meet:

Module Focus and Date	Content and Techniques
MODULE I: boredom and motivational problems DATE:	CASE EXAMPLE: "Toni is bored." DEVELOPING AN ETIOLOGY MODEL: - Activating events: examples related to boredom and motivational problems - Irrational beliefs: demandingness - Consequences: unpleasant emotions such as dissatisfaction, disappointment, anger, and depressiveness lead to maladaptive behavioral consequences such as avoidance and excessive Internet use. COGNITIVE RESTRUCTURING: identification, re-evaluation and modification of irrational beliefs STOPPING THOUGHTS: cognitive self-regulation training BEHAVIOR MODIFICATION: promoting real-life hobbies, problem solving and reinforcement
MODULE II: procrastination and performance anxiety DATE:	CASE EXAMPLE: "David has the jitters." DEVELOPING AN ETIOLOGY MODEL: - Activating events: examples related to procrastination and performance anxiety. - Irrational beliefs: demandingness and over-generalization - Consequences: unpleasant emotions such as fear, helplessness, anger, disappointment, frustration, apathy lead to maladaptive behavioral consequences such as avoidance and excessive Internet use. COGNITIVE RESTRUCTURING: identification, re-evaluation and modification of irrational beliefs STOPPING THOUGHTS: cognitive self-regulation training BEHAVIOR MODIFICATION: addressing instead of avoiding problems, problem solving and reinforcement
MODULE III: social interaction deficits DATE:	CASE EXAMPLE: "Leila is looking for friends." DEVELOPING AN ETIOLOGY MODEL: - Activating events: examples related to social interaction deficits - Irrational beliefs: demandingness, over-generalization and catastrophizing - Consequences: unpleasant emotions such as embarrassment, insecurity, shame, fear, loneliness, sadness lead to maladaptive behavioral consequences such as avoidance and excessive Internet use. COGNITIVE RESTRUCTURING: identification, re-evaluation and modification of irrational beliefs STOPPING THOUGHTS: cognitive self-regulation training BEHAVIOR MODIFICATION: learning confident social interaction: problem solving and reinforcement
MODULE IV: emotional dysregulation DATE:	CASE EXAMPLES: "Toni is bored, David has the jitters, Leila is looking for friends." UNDERSTANDING EMOTIONS: - Dimensions of emotions - Functions of emotions - Attributes of emotions EMOTION REGULATION: - Self-monitoring - Sensory techniques - Guided imaginary techniques - Mindfulness-based techniques

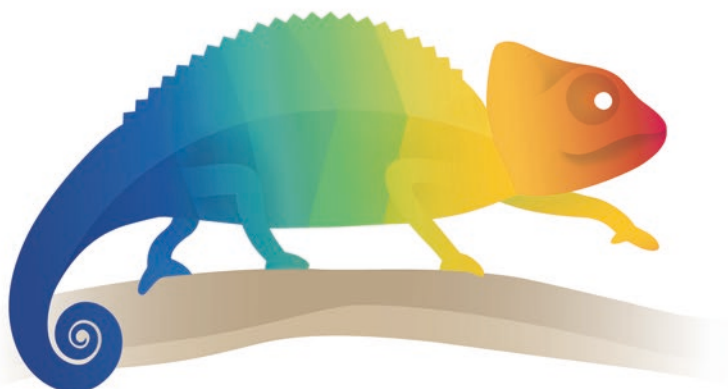


KEEPING BALANCE

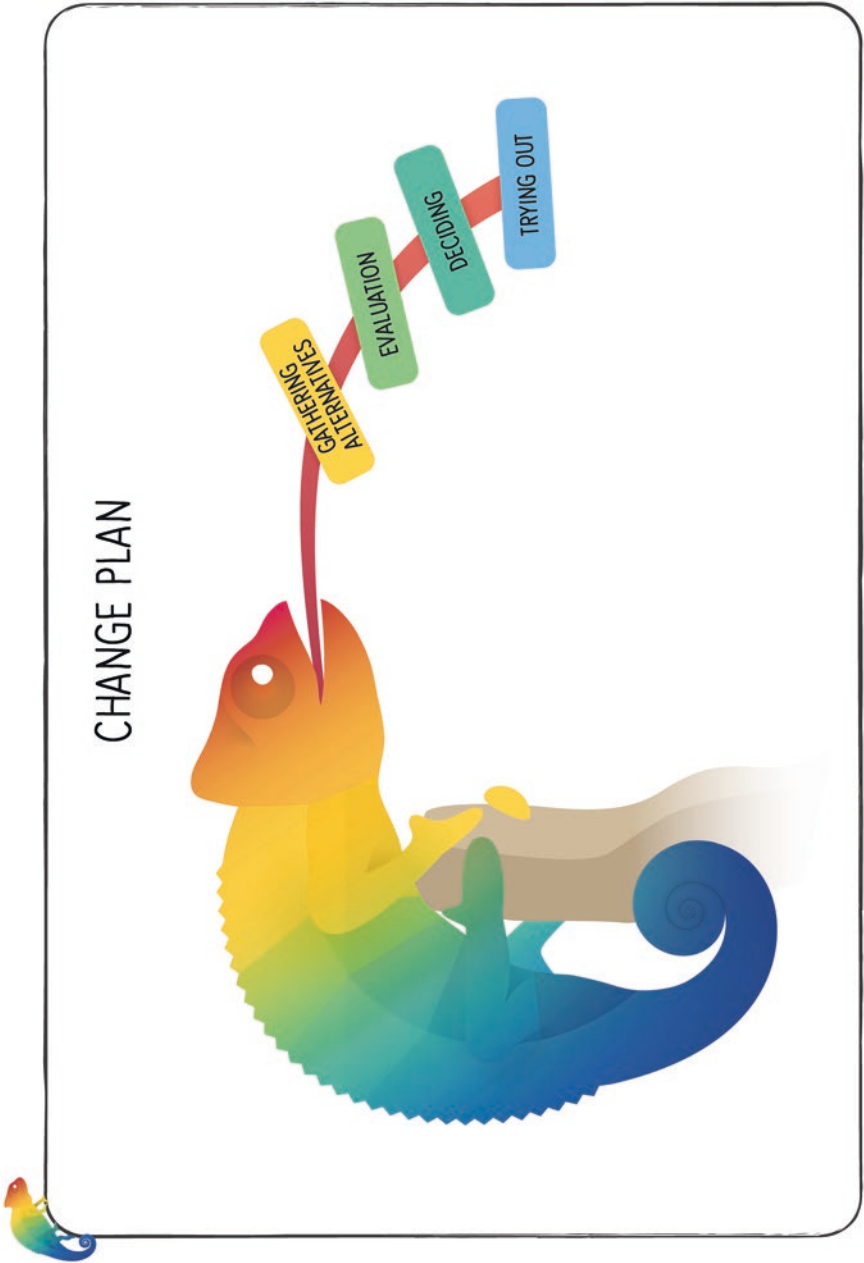




THE CHAMELEON













(1) REALITY CHECK

(2) THOUGHT STOPPING

(3) CHANGE PLAN



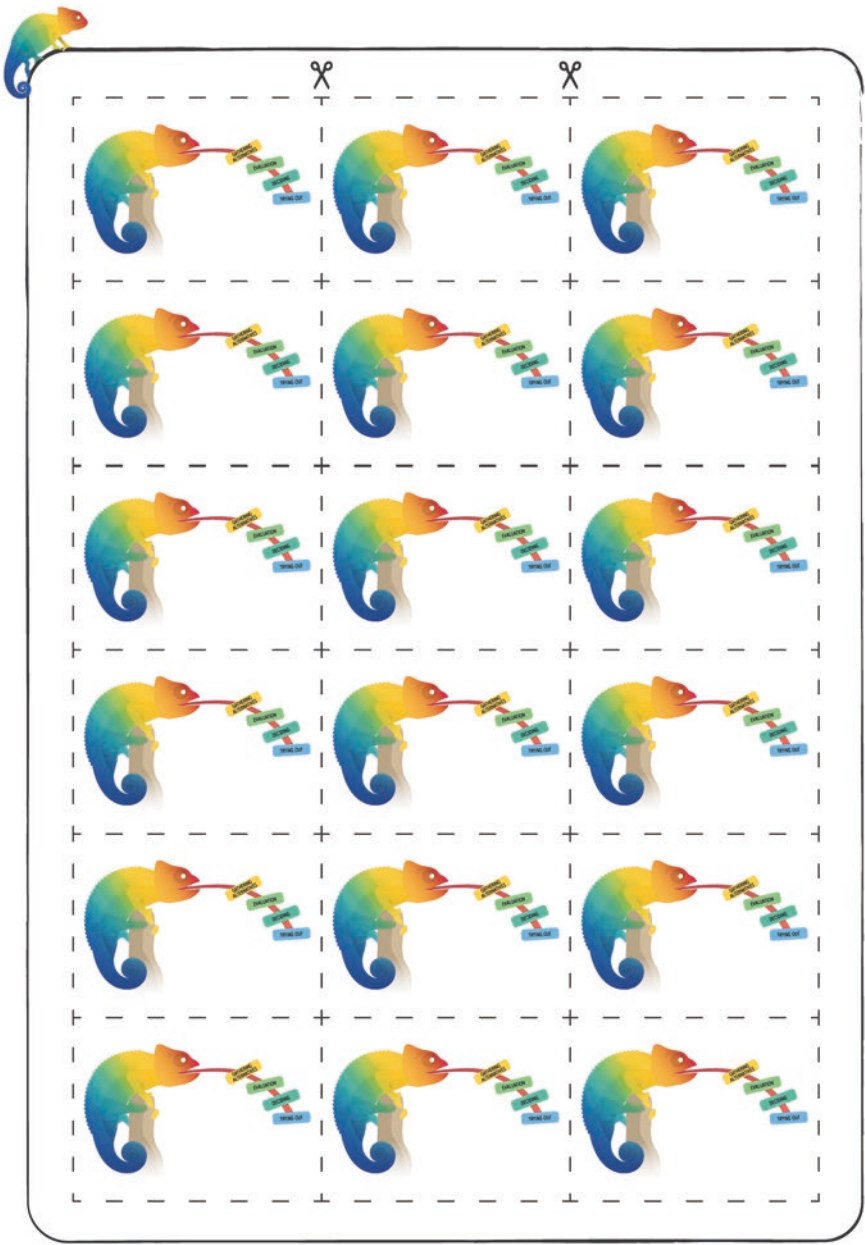
(4) SATELLITE

(5) INNER SAFE PLACE



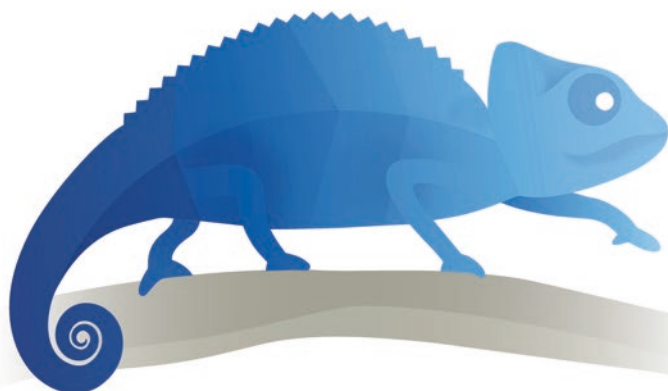
(6) PROGRESSIVE
MUSCLE RELAXATION

(7) GUMMI BEAR EXERCISE





MODULE 1





GROUP RULES

To ensure that we all feel comfortable in this group, we have created the following rules:

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____



SHHH... TOP SECRET!

During our meetings, we will talk about things that are very personal. What is said is TOP SECRET and must stay in the room!

It is important that we promise to not share anything discussed here with anyone else. An exception are your parents, whom you can tell what you want to.

Our signatures:

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |



PROS AND CONS

PROS OF THE "REAL WORLD"	PROS OF THE "VIRTUAL WORLD"
• Direct social interaction • Experiencing the world with "all senses" • Eye contact • Being able to see others' facial expression and gestures • Hearing someone's voice • Real friends and real relationships • Physical activity and fitness • Development of social competences • Experiencing physical limits • Success at school • Successful graduation • Strong bond with family • Cliques and circles of friends • Outdoor activities e.g. going for a walk • Hobbies • Making music or listening to it together • Being active artistically • Reading • Nature, garden, animals	• Entertainment • Being distracted from problems • Airbrushed self-portrayal from which I gain acknowledgement • Fast and easy successes • Effortless activity • Recurring reinforcement • Easy availability and marginal financial burden • Infinity (e.g. concerning "friends," information etc.) • Extended spacial experience • Compacted experience of time, "flow"-experience (pro/con) • Anonymity • Safe social distance and intimate bonds • Fast and noncommittal contacts • Strong experience of control • Communication over distances • Easy way to interact with people who have similar interests • Relevance in professional world
CONS "REAL WORLD"	CONS "VIRTUAL WORLD"
• Uncomfortable activities e.g. homework • Uncomfortable situations e.g. during social interaction • Uncomfortable emotions e.g. feeling ashamed • Failure • Boredom • Low motivation • Low endurance • Nothing interests me • Nobody notices me • Being rejected or disappointment • I am shy • I'm too afraid • Few friends • Little ability to control surroundings • Few successes • Little influence	• Social withdrawal and isolation, loneliness • (Self-) Neglect • Feelings of guilt and shame • Internet determines your life • Spacial boundaries through Internet availability • Activity deficit • Unmanageably large and unsorted flood of information • Communication limited by restricted system of symbols • Misinterpretation of messages • Limited opportunities to develop own abilities and competencies • Dropping out of school • Consumes too much time • Addictive



CASE EXAMPLE "TONI IS BORED"

"And once again I have nothing to do," Toni sighs in a bored voice. He has just come home from school. He hurls his backpack and jacket into the corner and sinks down on the sofa. What should he do all afternoon? "I have to do something really cool, otherwise I'll be bored again," Toni says.

"Toni, come and have lunch!" his mother calls. But Toni doesn't hear her as he passes by the kitchen. He is completely absorbed by his smartphone and sees that he has 58 new messages! "Probably the class group chat," thinks Toni. He immediately starts responding to the last message without even having read the previous ones. As soon as he closed the app, he receives two more messages. "I definitely have to read them before I have lunch- otherwise I won't know what the others are doing, will I? Mum, you have to bring my food to the couch. I have to text back first. This is very important!" Toni scrolls through his messages and immediately checks the news afterwards. That's what Toni always does. He opens the different apps automatically, without even having to think about what he is doing.

His mother comes to the couch with his full plate and warns him: "This is the last time I'm bringing you your lunch. Also, you haven't cleaned up your room in a very long time," she continues to nag. Toni is completely immersed in his smartphone and barely hears anything she's saying. "Yeah, yeah...", he mumbles, while thinking about what he should post next. "Whoooah, Noah posted pictures from mountain biking yesterday evening. I have to look at them right away! I bet mountain biking is a lot of fun," Toni marvels and begins to daydream.

Maybe he should try that too! After all, his brother's old bike is still in the cellar, and he would only have to repair it. "...But my mountain bike has to look cool, otherwise it won't be any fun. That's why I definitely need a new mountain bike. If not, that would just be really uncool."

At that moment, Toni looks at his phone to see some

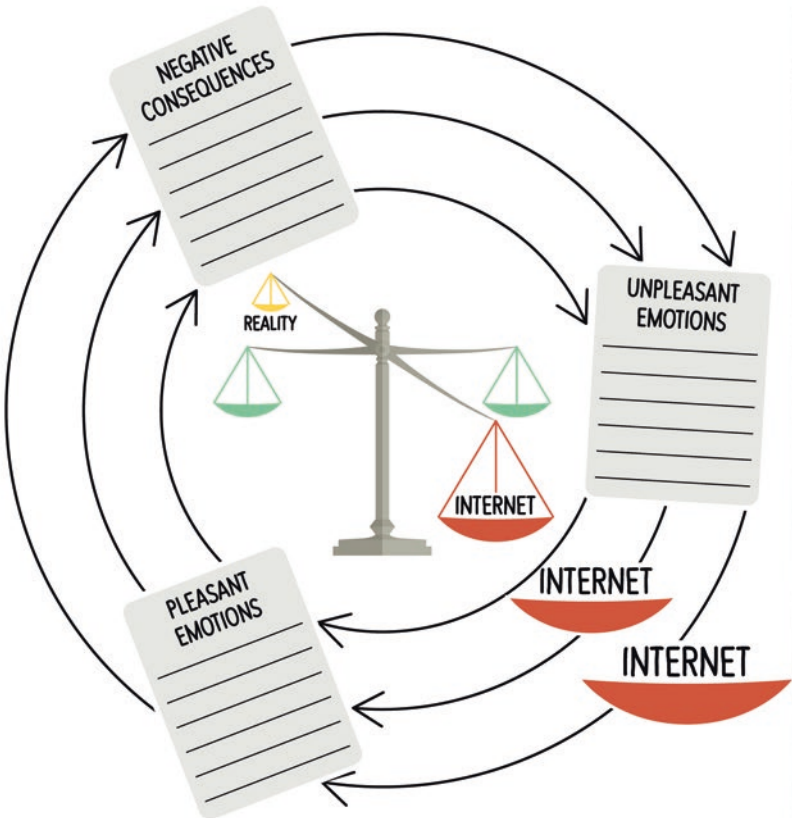
new posts, and his thoughts about mountain biking have vanished completely.

"I absolutely have to look at the newest posts, otherwise I will miss everything! After all, I have to be able to join in on the conversations tomorrow!" Click! He lands on Diego's profile page. "Oh, a photo of the entire soccer team! And the line-up for the game on Saturday! Adrian is tagged in it, too!" Toni notices. "Maybe I should also play soccer? I've actually wanted to have a look at their soccer practice for a long time, but I've always had other things to do." Disappointed and slightly annoyed with himself, Toni realizes that Diego and Adrian haven't asked him to come to practice for a while now. "Whatever! Soccer players have to be extremely fit anyway, otherwise it's really embarrassing." Toni pulls his cuddly blanket up to his chin. "Well, it's obvious I will never become a Ronaldo, and it's not as relaxing as playing computer games anyway."

Toni never had to put a lot of effort into being a good gamer. It comes to him so easily. His favorite are games with elaborate graphics and good sound. Still wrapped in his blanket, Toni shuffles into his room and turns on his computer. He recently discovered a new strategy game. "I have to practice it every day, or I will never become as good as the others!" Indeed, his scores get higher from day to day, even though the game is very difficult! This fills him with joyful anticipation and increases his motivation to continue playing. "That's what I call entertainment!" he rejoices. Sometimes he even plays until late at night, as he often has trouble falling asleep anyway. Just as he finished booting the computer he happens to look at the calendar on his wall. "What? It's already February 24th?" Toni is shocked. After all, it was his best friend Benjamin's birthday last week. Hadn't he planned to throw a party? "Darn, I totally forgot about that!" thinks Toni.

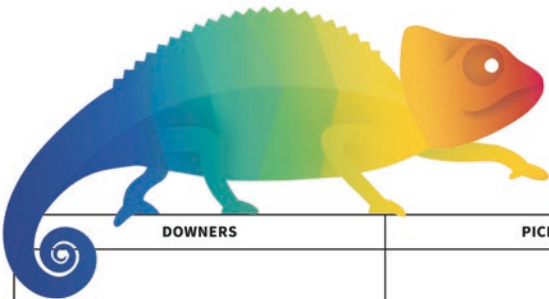


TONI'S VICIOUS CIRCLE





TONI'S REALITY CHECK



DOWNERS	PICK-ME-UPS



CASE EXAMPLE "TONI IS BORED"

"And once again I have nothing to do," Toni sighs in a bored voice. He has just come home from school. He hurls his backpack and jacket into the corner and sinks down on the sofa. What should he do all afternoon? **"I have to do something really cool, otherwise I'll be bored again," Toni says.**

} Demandingness

"Toni, come and have lunch!" his mother calls. But Toni doesn't hear her as he passes by the kitchen. He is completely absorbed by his smartphone and sees that he has 58 new messages! "Probably the class group chat," thinks Toni. He immediately starts responding to the last message without even having read the previous ones. As soon as he closed the app, he receives two more messages. **"I definitely have to read them before I have lunch.** Otherwise I won't know what the others are doing, will I? Mum, you have to bring my food to the couch. I have to text back first. This is very important!" Toni scrolls through his messages and immediately checks the news afterwards. That's what Toni always does. He opens the different apps automatically, without even having to think about what he is doing.

} Demandingness

His mother comes to the couch with his full plate and warns him: "This is the last time I'm bringing you your lunch. Also, you haven't cleaned up your room in a very long time," she continues to nag. Toni is completely immersed in his smartphone and barely hears anything she's saying. "Yeah, yeah..." he mumbles, while thinking about what he should post next. "Whoooah, Noah posted pictures from mountain biking yesterday evening. **I have to look at them right away!** I bet mountain biking is a lot of fun," Toni marvels and begins to daydream.

} Demandingness

Maybe he should try that too! After all, his brother's old bike is still in the cellar, and he would only have to repair it. "...But my mountain bike has to look cool, otherwise it won't be any fun. That's why I definitely need a new mountain bike. If not, that would just be really uncool."

At that moment, Toni looks at his phone to see some new posts, and his thoughts about mountain biking have vanished completely.

"I absolutely have to look at the newest posts, otherwise I will miss everything! After all, I have to be able to join in on the conversations tomorrow!" Click! He lands on Diego's profile page. "Oh, a photo of the entire soccer team! And the line-up for the game on Saturday! Adrian is tagged in it, too!" Toni notices. "Maybe I should also play soccer? I've actually wanted to have a look at their soccer practice for a long time, but I've always had other things to do." Disappointed and slightly annoyed with himself, Toni realizes that Diego and Adrian haven't asked him to come to practice for a while now. "Whatever! **Soccer players have to be extremely fit anyway, otherwise it's really em-**

} Demandingness

} Demandingness



barrassing." Toni pulls his cuddly blanket up to his chin. "Well, it's obvious I will never become a Ronaldo, and it's not as relaxing as playing computer games anyway."

Toni never had to put a lot of effort into being a good gamer. It comes to him so easily. His favorite are games with elaborate graphics and good sound. Still wrapped in his blanket, Toni shuffles into his room and turns on his computer. He recently discovered a new strategy game.

"I have to practice it every day, or I will never become as good as the others!"

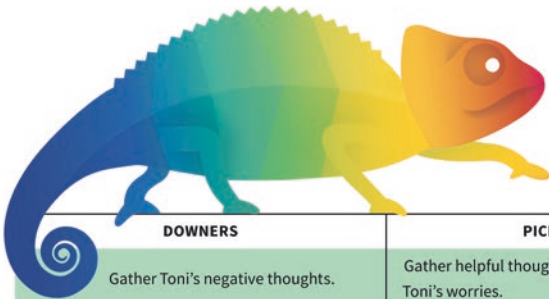
} Demandingness

Indeed, his scores get higher from day to day, even though the game is very difficult! This fills him with joyful anticipation and increases his motivation to continue playing. "That's what I call entertainment!" he rejoices. Sometimes he even plays until late at night, as he often has trouble falling asleep anyway.

Just as he finished booting the computer he happens to look at the calendar on his wall. "What? It's already February 24th?" Toni is shocked. After all, it was his best friend Benjamin's birthday last week. Hadn't he planned to throw a party? "Darn, I totally forgot about that!" thinks Toni.



TONI'S REALITY CHECK



DOWNERS	PICK-ME-UPS
Gather Toni's negative thoughts.	Gather helpful thoughts that could disconfirm Toni's worries.
"I have to do something really cool, otherwise I'll just get bored again."	"It would be nice if I could do something really awesome today, but I can't have that every day. Sometimes the normal everyday stuff needs to be done, too."
"Mum, you have to bring my food to the couch. I still have to text back first. This is important!"	"It would be nice if mum were to bring my food to the couch. But I can just ignore the texts for a short while and come to the table, too. They'll still be there later."
"...but my mountain bike really needs to look cool, or it won't be any fun. That's why I definitely need a new mountain bike, otherwise that would be really uncool."	"It would be cool if I got a really good new mountain bike at some point, but my brother's old bike is absolutely fine for practicing with in the beginning."
"I absolutely have to look at the newest posts, otherwise I will miss everything and after all, I have to be able to join in on the conversations tomorrow!"	"It would be nice if I could still manage to look through all the posts, so I could be up-to-date tomorrow. But if that doesn't work, I will still be able to pick up the important things that were discussed the next day."
"Whatever! Soccer players have to be extremely fit anyway, otherwise it's really embarrassing."	"Being a little sportier would be cool, but it's enough for a bit of recreational soccer in my free time."
"I have to practice it every day, or I will never become as good as the others."	"It would be nice if I had a little more time to practice and improve my skills, but after all, I don't have to prove anything to anyone and other things that are important to me simply also take up a lot of my time."



TONI'S CHANGE PLAN

GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
	Advantages	Disadvantages		
Toni's alternatives to using the Internet / playing computer games			Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?



TONI'S CHANGE PLAN

GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
	Advantages	Disadvantages		
Toni's alternatives to using the Internet / playing computer games			Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?
1. Play the guitar	• Ability to play a musical instrument • Possibly shared activity with friends • Admiration from others • Experience of self-competence • Fun • Relaxation	• Must practice for a long time • Discipline • Perseverance	X	
2. Do sports	• Motoric skills • Physical fitness, work off energy • Contact with peers • Experience of self-competence	• Physical strain • Practice times • Laziness		
3. Do volunteer work	• Appreciation • You do something good for others and feel good doing it • Fulfilling	• Can be time consuming • Cannot expect a reward		
4. Have a games night with friends or family	• Fun and entertaining • Having company • Being in contact with "real" people	• Patience • Planning		
5. Painting, drawing, crafting	• Fosters own creativity • Can be done alone or in a group • Relaxation	• Perseverance until first results can be seen		

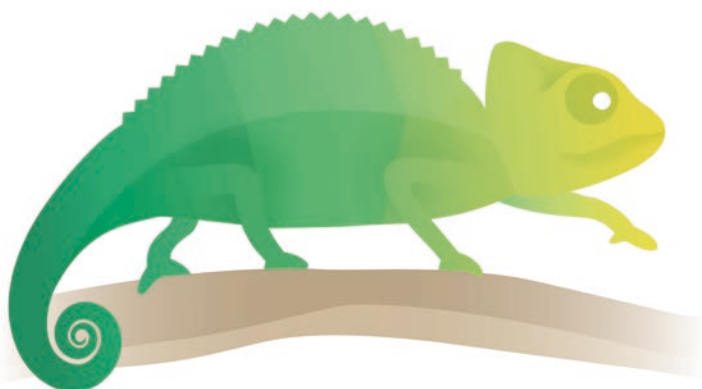


MY CHANGE PLAN AGAINST BOREDOM

GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
	Advantages	Disadvantages		
My alternatives to using the Internet / playing computer games			Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?



MODULE 2





CASE EXAMPLE "DAVID HAS THE JITTERS"

"Please keep in mind that you have a class test next Friday," David's math teacher says. As soon as David hears the words "class test," he is abruptly torn from his daydreams. "A class test? Not again!" he mumbles to himself as he feels his hands growing cold and sweaty. He slowly heaves himself out of his seat and trudges out of the classroom alongside Henry. "Do you understand what we are doing at the moment?" David asks his friend. "Well, not really," Henry responds, "but we still have an entire week left for us to understand everything." "I will never understand geometry, even less so in one week," David grumbles broodily. He is in a bad mood and barely says anything all morning. All he can think about are numbers, circles, triangles and his fear of completely failing his next math test. "And yet I really need to achieve a good grade again soon, otherwise my math teacher will think I am a total failure." By now it has even come so far that he is afraid of his next math lesson. "I never understand anything anyway," he thinks to himself. That day's sport lesson didn't go as well as usual either. "Damn!" David curses, "I just can't do anything right! I'm always bad at sports! Everything is going wrong!"

After school, he walks straight home. He is angry with himself and with his math teacher. His father is already waiting at home. "Hello David!" he calls from the kitchen, "how was your day at school?" "Leave me alone!" David growls through clenched teeth. "Did you get a test back?" his father probes further. "No!" David answers in an annoyed tone. "Then I assume there's going to be a test soon," his father pushes on, "Chin up, after all, the last test went well too." "I only got a C in the last test, and even that was solely because it was an easy one," David replies.

"I revised and practiced the calculations for hours and hours last time and in the end, it didn't pay off at all. It was incredibly exhausting and yet absolutely pointless," David thinks to himself, feeling helpless. "If you start revising a few days earlier there's nothing that can go wrong," his father tries to comfort

him. "That's true," David admits to himself. "But before I do that I really have to check my E-Mail."

Immediately, a mass of things spring to his mind that he still has to take care of first. "It'll be best if I check my E-Mails first." Henry had wanted to send him a new skateboarding video. "It is long overdue that I watch that. I desperately need to learn new tricks on the board, otherwise the others will be better than me." Therefore it is clear that David must see this video. Once done watching, David remembers that he must still take care of his virtual village that he spent the last weeks laboriously building online. "I urgently need to secure it against attacks and prepare the conquest of the next village. That simply can't wait and it is a lot more fun. I'm always good at that," David thinks to himself proudly. He does not notice the time passing at all. Only after he is finished with everything and his gaze falls on his Math book does his bad conscience flare up. His good mood is gone immediately. All of a sudden, he feels completely rigid and he senses a lump in his throat. David swallows. Just thinking of math is enough to make him feel nauseous. Suddenly, he feels very small again. "With me there's just nothing left to save concerning math. I always have failed and I always will fail at it." He clicks around his screen unenthusiastically, until he finds himself on a social media site. "Oh, a new message!" His classmate Mila, whom he has a crush on at the moment, invited him to her birthday party! Suddenly, David is once again happily caught in a daydream. His entire body is tingling with joy. "Cool, Alex and Lucas are online already." And with a pleasantly warm feeling in his stomach, he begins to game with his friends.

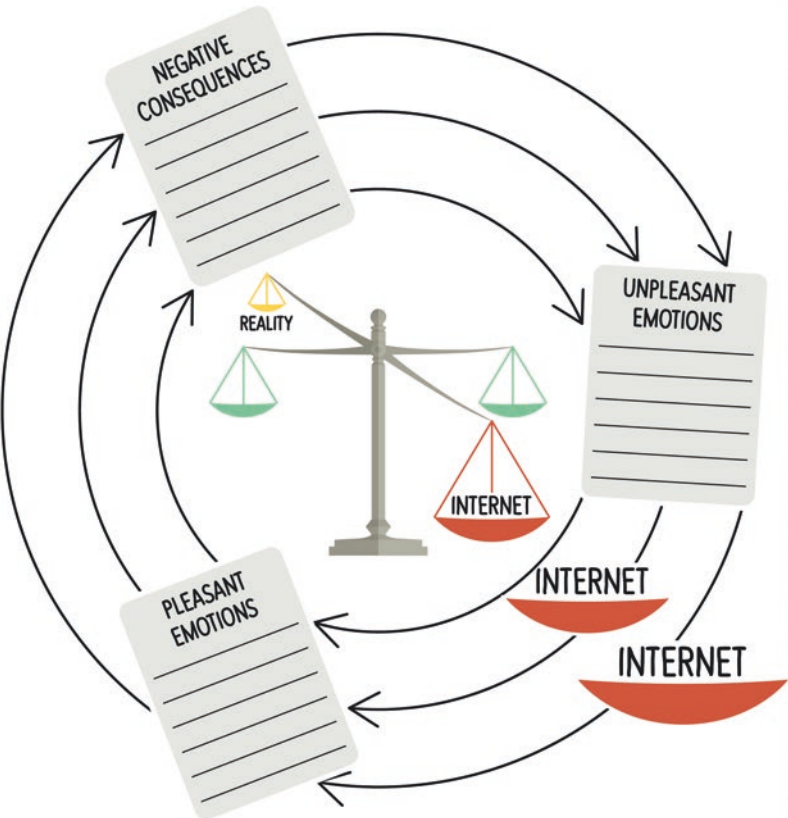
It is only when David's father comes into his room to check whether he is preparing for the upcoming test that he averts his gaze from his computer. Horrified, he realizes that he has not yet started revising. Once again, the fear and the anger that had already troubled him that morning come up in David. His heart beats faster and his hands clench themselves



into fists. "Math always goes wrong anyway," David mumbles, frustrated, "I still have to play another round first, otherwise I can't concentrate." It's gone dark outside, but that does not bother David. Once again, he has completely forgotten about his math test.

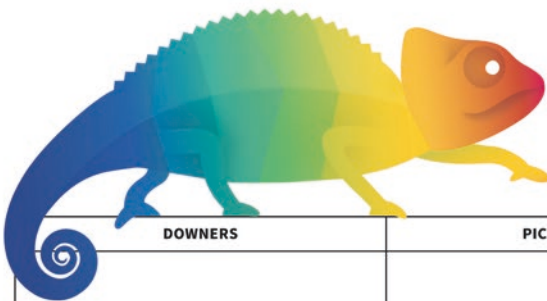


DAVID'S VICIOUS CIRCLE





DAVID'S REALITY CHECK



DOWNERS	PICK-ME-UPS



CASE EXAMPLE "DAVID HAS THE JITTERS"

"Please keep in mind that you have a class test next Friday," David's math teacher says. As soon as David hears the words "class test," he is abruptly torn from his daydreams. "A class test? Not again!" he mumbles to himself as he feels his hands growing cold and sweaty. He slowly heaves himself out of his seat and trudges out of the classroom alongside Henry. "Do you understand what we are doing at the moment?" David asks his friend. "Well, not really," Henry responds, "but we still have an entire week left for us to understand everything." **"I will never understand geometry, even less so in one week,"** David grumbles broodily. He is in a bad mood and barely says anything all morning. All he can think about are numbers, circles, triangles and his fear of completely failing his next math test. **"And yet I really need to achieve a good grade again soon, otherwise my math teacher will think I am a total failure."** By now it has even come so far that he is afraid of his next math lesson. "I never understand anything anyway," he thinks to himself. That day's sport lesson didn't go as well as usual either. "Damn!" David curses, **"I just can't do anything right! I'm always bad at sports! Everything is going wrong!"**

} Generalization

} Demandingness

} Generalization

After school, he walks straight home. He is angry with himself and with his math teacher. His father is already waiting at home. "Hello David!" he calls from the kitchen, "how was your day at school?" "Leave me alone!" David growls through clenched teeth. "Did you get a test back?" his father probes further. "No!" David answers in an annoyed tone. "Then I assume there's going to be a test soon," his father pushes on, "Chin up, after all, the last test went well too." "I only got a C in the last test, and even that was solely because it was an easy one," David replies.

"I revised and practiced the calculations for hours and hours last time and in the end, it didn't pay off at all. It was incredibly exhausting and yet absolutely pointless," David thinks to himself, feeling helpless. "If you start revising a few days earlier there's nothing that can go wrong," his father tries to comfort him. "That's true," David admits to himself. "But before I do that I really have to check my E-Mail."

Immediately, a mass of things spring to his mind that he still has to take care of first. "It'll be best if I check my E-Mails first." Henry had wanted to send him a new skateboarding video. "It is long overdue that I watch that. **I desperately need to learn new tricks on the board, otherwise the others will be better than me.**" Therefore it is clear that David must see this video. Once done watching, David remembers that he must still take care of his virtual village that he spent the last weeks laboriously building online. "I urgently need to secure it against

} Demandingness



attacks and prepare the conquest of the next village. That simply can't wait and it is a lot more fun. I'm always good at that," David thinks to himself proudly. He does not notice the time passing at all. Only after he is finished with everything and his gaze falls on his Math book does his bad conscience flare up. His good mood is gone immediately. All of a sudden, he feels completely rigid and he senses a lump in his throat. David swallows. Just thinking of math is enough to make him feel nauseous. Suddenly, he feels very small again. "With me there's just nothing left to save concerning math. **I always have failed and I always will fail at it.**" He clicks around his screen unenthusiastically, until he finds himself on a social media site. "Oh, a new message!" His classmate Mila, whom he has a crush on at the moment, invited him to her birthday party! Suddenly, David is once again happily caught in a daydream. His entire body is tingling with joy. "Cool, Alex and Lucas are online already." And with a pleasantly warm feeling in his stomach, he begins to game with his friends.

} Generalization

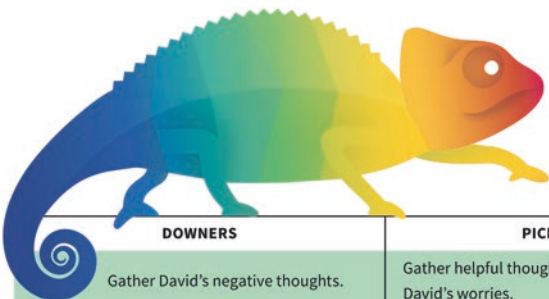
It is only when David's father comes into his room to check whether he is preparing for the upcoming test that he averts his gaze from his computer. Horrified, he realizes that he has not yet started revising. Once again, the fear and the anger that had already troubled him that morning come up in David. His heart beats faster and his hands clench themselves into fists. "**Math always goes wrong anyway,**" David mumbles, frustrated, "**I still have to play another round first, otherwise I can't concentrate.**" It's gone dark outside, but that does not bother David. Once again, he has completely forgotten about his math test.

} Generalization

} Demandingness



DAVID'S REALITY CHECK



DOWNERS	PICK-ME-UPS
Gather David's negative thoughts.	Gather helpful thoughts that could disconfirm David's worries.
"I will never understand geometry, especially not in one week."	"It's true that I find geometry really difficult sometimes, but if I try hard and have a good go at it now, I will manage to work through the subject matter in one week."
"I really need to achieve a good grade again soon, otherwise my math teacher will think I am a total failure."	"It would be nice to get a good grade in math again soon. I must admit that I feel a little ashamed of my bad grades."
"I never understand anything anyway!"	"Sometimes I really don't understand everything straightaway, but I'm certain that it will work out with a little more revision."
"I simply can't do anything right! I'm always bad at sports! Everything is going wrong!"	"Sports didn't go well either, today. There are just days when things aren't meant to be. It will all look better again tomorrow."
"I desperately need to learn new tricks on the skateboard, otherwise the others will be better than me."	"It would be nice to learn a few new tricks on the skateboard again. That would surely impress the others."
"There is nothing I can do about math. I always have failed, and I always will fail."	"Math quite simply isn't my subject. But some things just require more work for them to go smoothly."
"Math always goes wrong anyway! I just have to play another round first, otherwise I can't concentrate."	"It would be nice if I could play another round before I start my revision. But then I will surely find it very difficult to stop again. Therefore, I will revise first and then reward myself with a round of computer games afterwards."



DAVID'S CHANGE PLAN

GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
	Advantages	Disadvantages		
David's alternatives to using the Internet / playing computer games			Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?



DAVID'S CHANGE PLAN

GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
	Advantages	Disadvantages		
David's alternatives to using the Internet / playing computer games			Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?
1. Have someone quiz him a little every day	• Revision in little steps makes bingerevision under pressure unnecessary • Fear is reduced • Competence increases	• Daily confrontation with the subject that causes fear and discomfort • Unpleasant • Laborious	X	
2. Imitate the test at home	• Fear is reduced • Possible to practice the exam situation • Fears can be identified and alleviated	• Not a real exam situation • Strenuous • Unpleasant		
3. Arrange a pre-test with the teacher	• Performance appraisal possible • Teacher is in the picture	• Unpleasant		
4. Revise together with other students	• You learn how other students deal with exam situations • Transfer of knowledge between students • Reciprocal support	• You realize that other students might understand the subject better • Comparison and performance pressure		
5. Make a revision plan	• Time management • You can start to study early enough	• You have to deal with the disliked subject • Additional effort for planning		

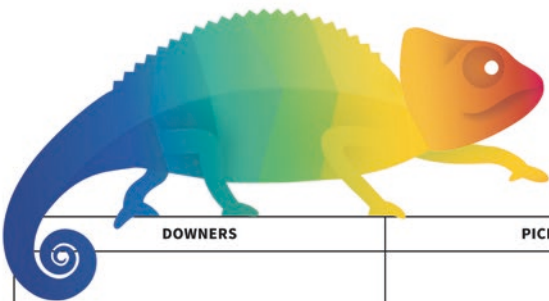


MY CHANGE PLAN AGAINST PERFORMANCE ANXIETY

GATHERING ALTERNATIVES		EVALUATION		DECIDING	TRYING OUT
My alternatives to using the Internet / playing computer games		Advantages	Disadvantages	Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?



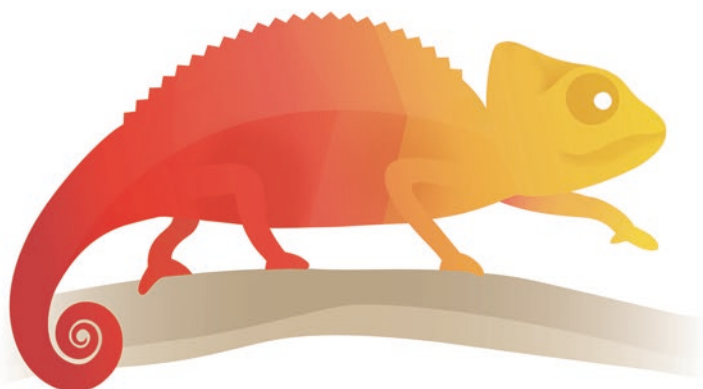
MY REALITY CHECK



DOWNERS	PICK-ME-UPS



MODULE 3





CASE EXAMPLE "LEILA IS LOOKING FOR FRIENDS"

Leila is sitting in English class all alone. She would love to make plans to go to the swimming pool after school, but she is too afraid to ask anyone. "It's awful, nobody wants me to come along," she thinks to herself. She just doesn't quite know how to start a conversation. What if the others think she's boring or if they don't like her? "Everyone has friends but me. That's horrible!" she thinks. "Maybe I could ask Sara." She had helped her with a math problem a short while back. "Surely she wouldn't have done that if she hadn't liked me at least a little bit." Leila is still a little unsure of herself, but she decides to muster up all of her courage and talk to Sara during the next break. "Yes, Sara must become my new friend, she is my only chance!"

Leila already feels uneasy when the school bell rings. She nervously stands outside of the classroom, waiting for Sara to come out. Her heart is racing, and her stomach is grumbling as soon as the first student walks past her. "Oh god, here comes Sara," she thinks to herself. Without even giving her a glance, Sara storms past Leila straight to Hannah, Jacob and Ethan. "How awful, she didn't even notice me! But no one ever notices me anyway." She walks over to them shakily and hesitantly. She is too afraid to look them in the eye and stares at the floor instead. Leila is petrified. "I bet I'll blush again because I'm so nervous. I always blush when I'm nervous, it's so embarrassing! I'm feeling hot already. And in the end, they'll all laugh at me. I'll never find friends like this!" she thinks to herself in despair. Her body is completely tense, and her shoulders are rigid. As Leila approaches the group, their mumbling slowly grows quieter until they are completely silent. "How terrible, now they've even suddenly stopped talking. I'm sure they were talking about me. Everybody gossips about me anyway." Timidly, she turns toward Sara. She can feel a lump growing in her throat, making it hard for her to breathe. She'd rather not say anything at all anymore, but she has to now, because they are all looking straight at her.

Leila doesn't even remember how to start a conversation anymore and quietly stutters: "Sara, umm, uh... so I, I wanted to ask... well, the weather is so great today and it's supposed to get even hotter this afternoon and I thought... well, I thought it would be nice to go to the swimming pool today. So, umm, uh... of course only if you want to. But... but if that isn't possible... oh, never mind."

They are still staring at her, but no one says a word. "Oh no, oh no!" Leila thinks to herself, "How awful, nobody is saying anything! The others probably think my idea is boring!" "Only people with good ideas can find friends," she thinks to herself. One more time, Leila musters all her courage and comes up with a story in another attempt to impress Sara: "Do you know what I did last weekend? I was at the swimming pool and I jumped off the ten-meter board! That was totally extreme! And so cool!"

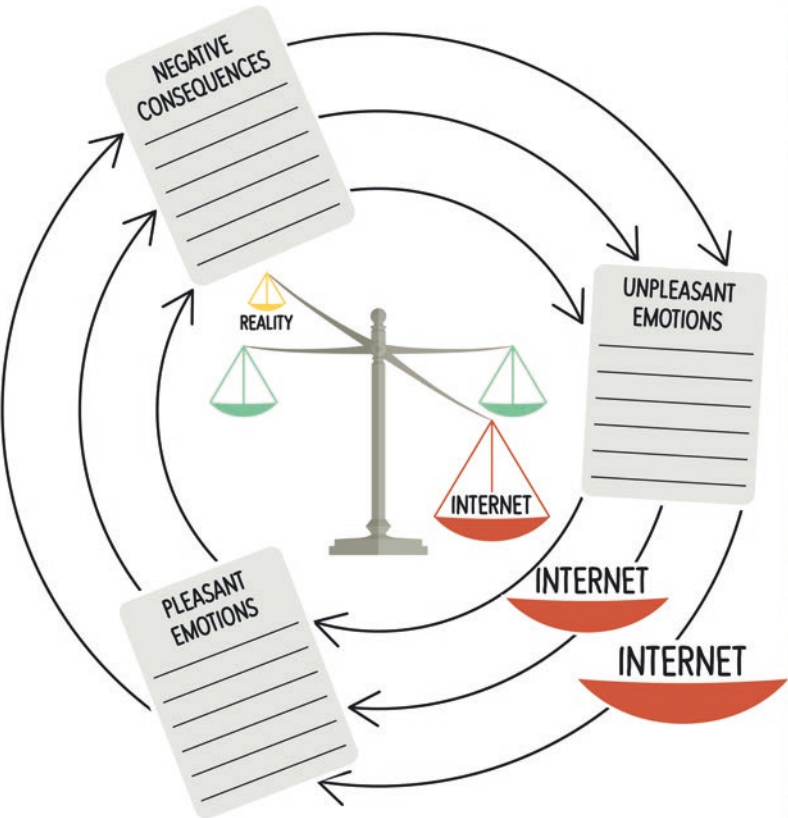
Still, no one shows any sign of reaction. She risks a quick glance upwards. Jacob and Hannah are looking at each other and rolling their eyes. Immediately, Leila is ashamed of herself and wants to vanish off the face of the earth immediately. All of a sudden, Sara bursts out laughing and asks Leila: "What exactly do you want?" Now, everyone has joined in laughing. With a wavering voice, Leila manages to scrape up the rest of her courage: "Well, uh, I actually just wanted to ask you, if you...", "If I was going to come to the pool with you?" Sara finishes her question. "Sorry Leila, but I already have plans with Jacob, Ethan and Hannah. We were going to watch that new movie at the movie theater. That's also what we were talking about just now, actually." Leila nods, ashamed of herself. Without another word, she turns around and flees from the situation as quickly as she can. Once again, she hears roaring laughter in the background and starts walking faster. "Just get away as quickly as possible!" she tells herself and starts running as she feels tears brimming in her eyes. "Nobody likes me! I wish I never had to go back to school again!"



Leila rides home and is angry at herself and her stupid idea to talk to Sara. As soon as she gets home, she disappears straight into her room. Back at home, she lunges onto her bed with relief and turns on her laptop with joyful anticipation. Leila is active on various forums and has many friends there. She regularly chats with two girls online. When she sees that Maria and Chloe are already online, she is immediately relieved and tells them about what happened. "Finally, I've found real friends," Leila thinks happily, "And it's so much easier than at school. Here, I feel safe and I don't have to worry about beginning to stutter or blushing. Everyone here is always friendly and open-minded. I've been a part of this online group from the very beginning and I am accepted and respected for my good ideas." Leila feels so comfortable around Maria and Chloe that she shares her biggest worries with them. And the best part is that she's never been laughed at or given strange looks. "And how should they," Leila thinks to herself, "After all, we can't see each other."

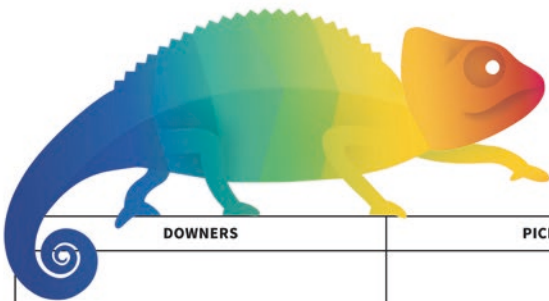


LEILA'S VICIOUS CIRCLE





LEILA'S REALITY CHECK



DOWNERS	PICK-ME-UPS



CASE EXAMPLE "LEILA IS LOOKING FOR FRIENDS"

Leila is sitting in English class all alone. She would love to make plans to go to the swimming pool after school, but she is too afraid to ask anyone. **"It's awful, nobody wants me to come along,"** she thinks to herself. She just doesn't quite know how to start a conversation. What if the others think she's boring or if they don't like her? **"Everyone has friends but me. That's horrible!"** she thinks. "Maybe I could ask Sara." She had helped her with a math problem a short while back. "Surely she wouldn't have done that if she hadn't liked me at least a little bit." Leila is still a little unsure of herself, but she decides to muster up all of her courage and talk to Sara during the next break. **"Yes, Sara must become my new friend, she is my only chance!"**

} Catastrophizing, Generalization

} Catastrophizing

} Demandingness

Leila already feels uneasy when the school bell rings. She nervously stands outside of the classroom, waiting for Sara to come out. Her heart is racing, and her stomach is grumbling as soon as the first student walks past her. "Oh god, here comes Sara," she thinks to herself. Without even giving her a glance, Sara storms past Leila straight to Hannah, Jacob and Ethan. **"How awful, she didn't even notice me! But no one ever notices me anyway."** She walks over to them shakily and hesitantly. She is too afraid to look them in the eye and stares at the floor instead. Leila is petrified. "I bet I'll blush again because I'm so nervous. **I always blush when I'm nervous, it's so embarrassing!** I'm feeling hot already. And in the end, they'll all laugh at me. **I'll never find friends like this!**" she thinks to herself in despair. Her body is completely tense, and her shoulders are rigid. As Leila approaches the group, their mumbling slowly grows quieter until they are completely silent. **"How terrible, now they've even suddenly stopped talking. I'm sure they were talking about me. Everybody gossips about me anyway."** Timidly, she turns toward Sara. She can feel a lump growing in her throat, making it hard for her to breathe. She'd rather not say anything at all anymore, but she has to now, because they are all looking straight at her.

} Catastrophizing, Generalization

} Generalization

} Catastrophizing, Generalization

Leila doesn't even remember how to start a conversation anymore and quietly stutters: "Sara, umm, uh... so I, I wanted to ask... well, the weather is so great today and it's supposed to get even hotter this afternoon and I thought... well, I thought it would be nice to go to the swimming pool today. So, umm, uh... of course only if you want to. But... but if that isn't possible... oh, never mind."

They are still staring at her, but no one says a word. "Oh no, oh no!" Leila thinks to herself, **"How awful, nobody is saying anything! The others probably think my idea is boring!"** "Only people with good ideas can find friends," she thinks to herself. One more time, Leila musters all

} Catastrophizing



her courage and comes up with a story in another attempt to impress Sara: "Do you know what I did last weekend? I was at the swimming pool and I jumped off the ten-meter board! That was totally extreme! And so cool!"

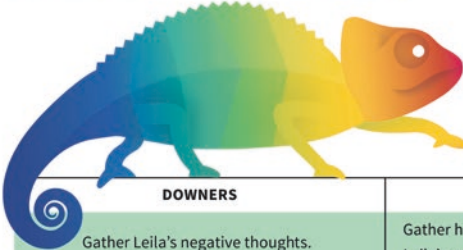
Still, no one shows any sign of reaction. She risks a quick glance upwards. Jacob and Hannah are looking at each other and rolling their eyes. Immediately, Leila is ashamed of herself and wants to vanish off the face of the earth immediately. All of a sudden, Sara bursts out laughing and asks Leila: "What exactly do you want?" Now, everyone has joined in laughing. With a wavering voice, Leila manages to scrape up the rest of her courage: "Well, uh, I actually just wanted to ask you, if you...", "If I was going to come to the pool with you?" Sara finishes her question. "Sorry Leila, but I already have plans with Jacob, Ethan and Hannah. We were going to watch that new movie at the movie theater. That's also what we were talking about just now, actually." Leila nods, ashamed of herself. Without another word, she turns around and flees from the situation as quickly as she can. Once again, she hears roaring laughter in the background and starts walking faster. "Just get away as quickly as possible!" she tells herself and starts running as she feels tears brimming in her eyes. "**Nobody likes me!** I wish I never had to go back to school again!"

} Generalization

Leila rides home and is angry at herself and her stupid idea to talk to Sara. As soon as she gets home, she disappears straight into her room. Back at home, she lunges onto her bed with relief and turns on her laptop with joyful anticipation. Leila is active on various forums and has many friends there. She regularly chats with two girls online. When she sees that Maria and Chloe are already online, she is immediately relieved and tells them about what happened. "Finally, I've found real friends," Leila thinks happily, "And it's so much easier than at school. Here, I feel safe and I don't have to worry about beginning to stutter or blushing. Everyone here is always friendly and open-minded. I've been a part of this online group from the very beginning and I am accepted and respected for my good ideas." Leila feels so comfortable around Maria and Chloe that she shares her biggest worries with them. And the best part is that she's never been laughed at or given strange looks. "And how should they," Leila thinks to herself, "After all, we can't see each other."



LEILA'S REALITY CHECK



DOWNERS	PICK-ME-UPS
Gather Leila's negative thoughts.	Gather helpful thoughts that could disconfirm Leila's worries.
"It's awful, nobody wants me to come along."	"It's sad that I have the feeling of not being part of the group. But maybe I should just start actively trying to look for friends?"
"Everyone has friends but me! That's so horrible!"	"Maybe I don't have as many friends as others. But I will do my best to find friends."
"Yes, Sara must become my new friend, she is my only chance!"	"It would be nice if Sara would become my friend, but if she doesn't, there are other nice girls in my class, too."
"How awful, she didn't even notice me! But no one ever notices me anyway."	"She doesn't seem to have noticed me. Maybe I should make a more energetic appearance next time."
"I always blush when I'm nervous, it's so embarrassing! I'm feeling hot already. And in the end, they'll all laugh at me. I'll never find friends like this!"	"I sometimes blush when I'm excited, but that's normal, it happens to others as well. I'll just take a deep breath first and then I'll go and talk to Sara!"
"How dreadful! Everybody gossips about me anyway."	"I seem to have disturbed the group in their conversation – maybe they wanted to talk about something private."
"Oh no, oh no! How awful, nobody is answering!"	"Nobody is responding. Maybe I didn't phrase my question clearly enough and they didn't understand what I wanted."
"Nobody likes me!"	"They don't seem to like me. Maybe they just don't like new members in their clique. But I'm sure there are others who will like me. I just have to continue actively approaching people, then it will surely work out at some point."



LEILA'S CHANGE PLAN

GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
	Advantages	Disadvantages		
Leila's alternatives to using the internet / playing computer games			Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?



LEILA'S CHANGE PLAN

GATHERING ALTERNATIVES	EVALUATION		DECIDING	TRYING OUT
	Advantages	Disadvantages		
Leila's alternatives to using the internet / playing computer games			Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?
1. Make another attempt to make friends at school the next day in a different situation	• Potential revision of yesterday's failure • A positive feeling towards your classmates and school	• You could make a fool of yourself • It might not work	X	
2. Find a hobby that allows you to meet other people, e.g. a sports club	• People you share interests with • Other people approach you without bias • New people who are also looking for friends in the new group • Enjoyable new hobby • Possibly positive experiences and reduction of fear during confrontation/starting a conversation with people	• Lots of foreign people • Takes a lot of courage • It might be hard to find your way into in a preexisting closed community		
3. Engage in voluntary activities or find a part-time job	• Common topics with new people • Fulfillment and happiness • Possibly positive experiences and reduction of fear during confrontation/starting a conversation with people • Other people approach you without bias	• Time-consuming • Colleagues often like to separate work from private issues		
4. Meet your friends from the chatrooms in real life	• Testing a pre-existing friendship in real life • Low probability of being rejected, as one already knows each other	• Virtual friends might not be as nice in real life • Virtual friends might turn out to be different than expected (e.g. not your age) • It might be dangerous to meet strangers, you should inform an adult about your appointment or bring a friend		
5. Confrontation: not running away from unpleasant situations, trying to settle the situation/problem directly	• It might turn out that the other person's reaction was a misunderstanding • The opposite might be impressed by the other person's courage and will to settle the dispute	• Another person might not be prepared to settle the dispute • You might be too nervous and behave awkwardly		

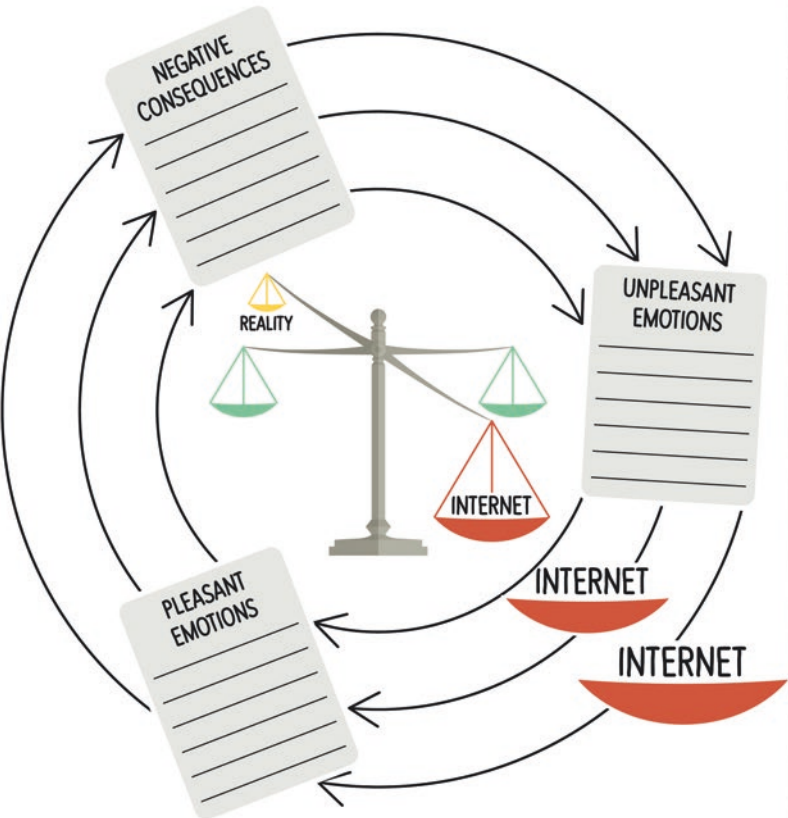


MY CHANGE PLAN FOR FRIENDSHIP

GATHERING ALTERNATIVES		EVALUATION		DECIDING	TRYING OUT
My alternatives to using the Internet / playing computer games		Advantages	Disadvantages	Decision (tick the box)	Did it work? Did I give it a try? Was it fun? Was it hard? Do I want to do it again or continue doing it in the future?

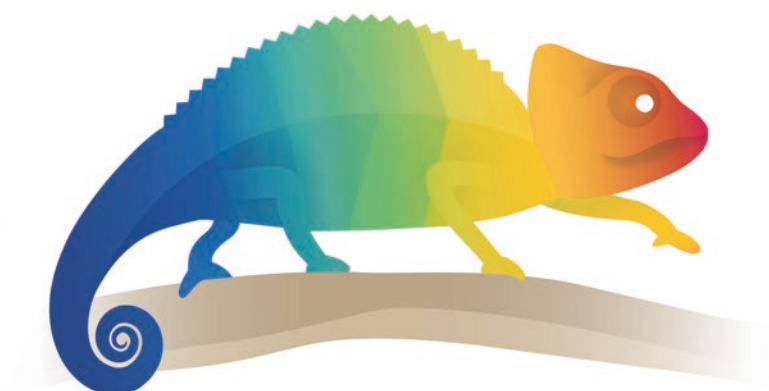


MY VICIOUS CIRCLE



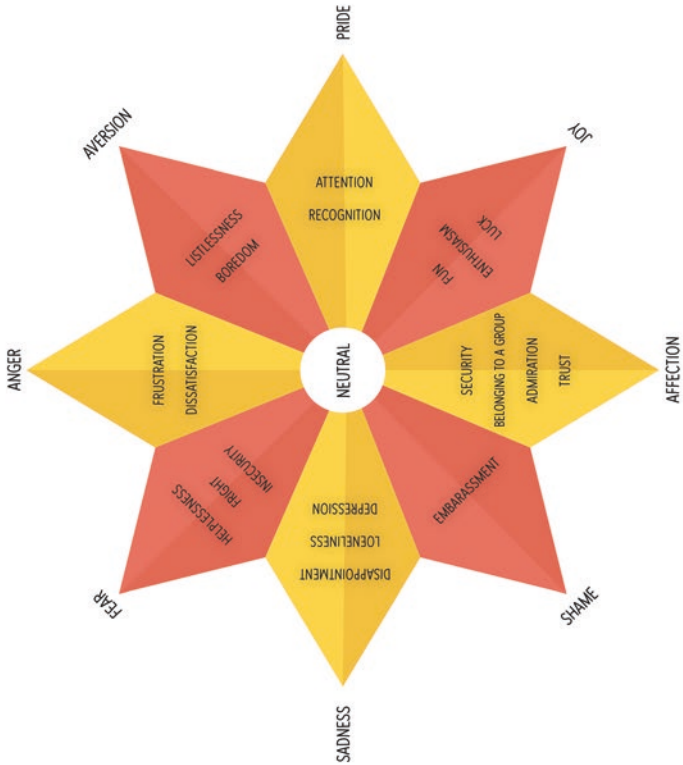


MODULE 4





THE STAR OF EMOTIONS









CASE EXAMPLE "TONI IS BORED"

"And once again I have nothing to do," Toni sighs in a bored voice. He has just come home from school. He hurls his backpack and jacket into the corner and sinks down on the sofa. What should he do all afternoon? "I have to do something really cool, otherwise I'll be bored again," Toni says.

"Toni, come and have lunch!" his mother calls. But Toni doesn't hear her as he passes by the kitchen. **He is completely absorbed by his smartphone and sees that he has 58 new messages!** "Probably the class group chat," thinks Toni. He immediately starts responding to the last message without even having read the previous ones. As soon as he closed the app, he receives two more messages. "I definitely have to read them before I have lunch. Otherwise I won't know what the others are doing, will I? Mum, you have to bring my food to the couch. I have to text back first. This is very important!" Toni scrolls through his messages and immediately checks the news afterwards. That's what Toni always does. He opens the different apps automatically, without even having to think about what he is doing.

} Enthusiasm

His mother comes to the couch with his full plate and warns him: "This is the last time I'm bringing you your lunch. Also, you haven't cleaned up your room in a very long time," she continues to nag. Toni is completely immersed in his smartphone and barely hears anything she's saying. "Yeah, yeah..." he mumbles, while thinking about what he should post next. **"Whoooah, Noah posted pictures from mountain biking yesterday evening. I have to look at them right away! I bet mountain biking is a lot of fun," Toni marvels and begins to daydream.**

} Admiration, Enthusiasm

Maybe he should try that too! After all, his brother's old bike is still in the cellar, and he would only have to repair it. "...But my mountain bike has to look cool, otherwise it won't be any fun. That's why I definitely need a new mountain bike. If not, that would just be really uncool."

At that moment, Toni looks at his phone to see some new posts, and his thoughts about mountain biking have vanished completely.

"I absolutely have to look at the newest posts, otherwise I will miss everything! After all, I have to be able to join in on the conversations tomorrow!" Click! He lands on Diego's profile page. "Oh, a photo of the entire soccer team! And the line-up for the game on Saturday! Adrian is tagged in it, too!" Toni notices. "Maybe I should also play soccer? I've actually wanted to have a look at their soccer practice for a long time, but I've always had other things to do." **Disappointed and slightly annoyed with himself, Toni realizes that Diego and Adrian haven't asked him to come to practice for a while now.** "Whatever! Soccer players have to be extremely fit anyway, otherwise it's really

} Disappointment, Anger



embarrassing." **Toni pulls his cuddly blanket up to his chin. "Well, it's obvious I will never become a Ronaldo, and it's not as relaxing as playing computer games anyway."**

} Dejection

Toni never had to put a lot of effort into being a good gamer. It comes to him so easily. His favorite are games with elaborate graphics and good sound. Still wrapped in his blanket, Toni shuffles into his room and turns on his computer. He recently discovered a new strategy game. "I have to practice it every day, or I will never become as good as the others!"

Indeed, his scores get higher from day to day, even though the game is very difficult! **This fills him with joyful anticipation and increases his motivation to continue playing.**

} Joy

"That's what I call entertainment!" he rejoices. Sometimes he even plays until late at night, as he often has trouble falling asleep anyway.

Just as he finished booting the computer he happens to look at the calendar on his wall. "What? It's already February 24th?" **Toni is shocked.** After all, it was his best friend Benjamin's birthday last week. Hadn't he planned to throw a party? "Darn, I totally forgot about that!" thinks Toni.

} Shock



DAVID HAS THE JITTERS

"Please keep in mind that you have a class test next Friday," David's math teacher says. As soon as David hears the words "class test," he is abruptly torn from his daydreams. "A class test? Not again!" he mumbles to himself as he feels his hands growing cold and sweaty. He slowly heaves himself out of his seat and trudges out of the classroom alongside Henry. "Do you understand what we are doing at the moment?" David asks his friend. "Well, not really," Henry responds, "but we still have an entire week left for us to understand everything." "I will never understand geometry, even less so in one week," David grumbles broodily. **He is in a bad mood and barely says anything all morning. All he can think about are numbers, circles, triangles and his fear of completely failing his next math test.**

} Fear

"And yet I really need to achieve a good grade again soon, otherwise my math teacher will think I am a total failure." By now it has even come so far that he is afraid of his next math lesson. "I never understand anything anyway," he thinks to himself. That day's sport lesson didn't go as well as usual either. "Damn!" David cusses, "I just can't do anything right! I'm always bad at sports! Everything is going wrong!" After school, he walks straight home. **He is angry with himself and with his math teacher.**

} Anger, Disappointment

His father is already waiting at home. "Hello David!" he calls from the kitchen, "how was your day at school?" "Leave me alone!" David growls through clenched teeth. "Did you get a test back?" his father probes further. "No!" David answers in an annoyed tone. "Then I assume there's going to be a test soon," his father pushes on, "Chin up, after all, the last test went well too." "I only got a C in the last test, and even that was solely because it was an easy one," David replies.

"I revised and practiced the calculations for hours and hours last time and in the end, it didn't pay off at all. **It was incredibly exhausting and yet absolutely pointless,**" David thinks to himself, **feeling helpless.** "If you start revising a few days earlier there's nothing that can go wrong," his father tries to comfort him. "That's true," David admits to himself. "But before I do that I really have to check my E-Mail."

} Helplessness

Immediately, a mass of things spring to his mind that he still has to take care of first. "It'll be best if I check my E-Mails first," Henry had wanted to send him a new skateboarding video. "It is long overdue that I watch that. I desperately need to learn new tricks on the board, otherwise the others will be better than me." Therefore it is clear that David must see this video. Once done watching, David remembers that he must still take care of his virtual village that he spent the last weeks laboriously building online. "I urgently need to secure it against attacks and prepare the conquest of the next village. **That simply can't wait and**



it is a lot more fun. I'm always good at that," David thinks to himself proudly. He does not notice the time passing at all. Only after he is finished with everything and his gaze falls on his Math book does his bad conscience flare up. His good mood is gone immediately. All of a sudden, he feels completely rigid and he senses a lump in his throat. David swallows. Just thinking of math is enough to make him feel nauseous. Suddenly, he feels very small again. "With me there's just nothing left to save concerning math. I always have failed and I always will fail at it." He clicks around his screen unenthusiastically, until he finds himself on a social media site. "Oh, a new message!" His classmate Mila, whom he has a crush on at the moment, invited him to her birthday party! Suddenly, David is once again happily caught in a daydream. His entire body is tingling with joy. "Cool, Alex and Lucas are online already."

And with a pleasantly warm feeling in his stomach, he begins to game with his friends.

It is only when David's father comes into his room to check whether he is preparing for the upcoming test that he averts his gaze from his computer. Horrified, he realizes that he has not yet started revising. Once again, the fear and the anger that had already troubled him that morning come up in David. His heart beats faster and his hands clench themselves into fists. "Math always goes wrong anyway," David mumbles, frustrated, "I still have to play another round first, otherwise I can't concentrate." It's gone dark outside, but that does not bother David. Once again, he has completely forgotten about his math test.

} Enjoyment, Pride

} Fear

} Helplessness, Apathy

} Happiness

} Frustration



LEILA IS LOOKING FOR FRIENDS

Leila is sitting in English class all alone. She would love to make plans to go to the swimming pool after school, but she is too afraid to ask anyone. "It's awful, nobody wants me to come along," she thinks to herself. She just doesn't quite know how to start a conversation. What if the others think she's boring or if they don't like her? "Everyone has friends but me. That's horrible!" she thinks. "Maybe I could ask Sara." She had helped her with a math problem a short while back. "Surely she wouldn't have done that if she hadn't liked me at least a little bit." Leila is still a little unsure of herself, but she decides to muster up all of her courage and talk to Sara during the next break. "Yes, Sara must become my new friend, she is my only chance!"

Leila already feels uneasy when the school bell rings. She nervously stands outside of the classroom, waiting for Sara to come out. } Fear

Her heart is racing, and her stomach is grumbling as soon as the first student walks past her. "Oh god, here comes Sara," she thinks to herself. Without even giving her a glance, Sara storms past Leila straight to Hannah, Jacob and Ethan. "How awful, she didn't even notice me! But no one ever notices me anyway." She walks over to them shakily and hesitantly. She is too afraid to look them in the eye and stares at the floor instead. Leila is petrified. "I bet I'll blush again because I'm so nervous. I always blush when I'm nervous, it's so embarrassing! I'm feeling hot already. And in the end, they'll all laugh at me. I'll never find friends like this!" she thinks to herself in despair. Her body is completely tense, and her shoulders are rigid.

} Embarrassment

As Leila approaches the group, their mumbling slowly grows quieter until they are completely silent. "How terrible, now they've even suddenly stopped talking. I'm sure they were talking about me. Everybody gossips about me anyway." **Timidly, she turns toward Sara. She can feel a lump growing in her throat, making it hard for her to breathe.** } Fear

She'd rather not say anything at all anymore, but she has to now, because they are all looking straight at her.

Leila doesn't even remember how to start a conversation anymore and quietly stutters: "Sara, umm, uh... so I, I wanted to ask... well, the weather is so great today and it's supposed to get even hotter this afternoon and I thought... well, I thought it would be nice to go to the swimming pool today. So, umm, uh... of course only if you want to. But... but if that isn't possible... oh, never mind."

They are still staring at her, but no one says a word. "Oh no, oh no!" Leila thinks to herself, "How awful, nobody is saying anything! The others probably think my idea is boring!" "Only people with good ideas can find friends," she thinks to herself. One more time, Leila musters all



her courage and comes up with a story in another attempt to impress Sara: "Do you know what I did last weekend? I was at the swimming pool and I jumped off the ten-meter board! That was totally extreme! And so cool!"

Still, no one shows any sign of reaction. She risks a quick glance upwards. Jacob and Hannah are looking at each other and rolling their eyes. **Immediately, Leila is ashamed of herself and wants to vanish off the face of the earth immediately.** All of a sudden, Sara bursts out laughing and asks Leila: "What exactly do you want?" Now, everyone has joined in laughing. With a wavering voice, Leila manages to scrape up the rest of her courage: "Well, uh, I actually just wanted to ask you, if you...", "If I was going to come to the pool with you?" Sara finishes her question. "Sorry Leila, but I already have plans with Jacob, Ethan and Hannah. We were going to watch that new movie at the movie theater. That's also what we were talking about just now, actually." Leila nods, ashamed of herself. Without another word, she turns around and flees from the situation as quickly as she can. Once again, she hears roaring laughter in the background and starts walking faster. "Just get away as quickly as possible!" she tells herself and starts running as she feels tears brimming in her eyes. "Nobody likes me! I wish I never had to go back to school again!"

} Shame

Leila rides home and is angry at herself and her stupid idea to talk to Sara. As soon as she gets home, she disappears straight into her room. Back at home, she lunges onto her bed with relief and turns on her laptop with joyful anticipation. Leila is active on various forums and has many friends there. She regularly chats with two girls online. **When she sees that Maria and Chloe are already online, she is immediately relieved and tells them about what happened.** "Finally, I've found real friends," Leila thinks happily, "And it's so much easier than at school.

} Happiness

Here, I feel safe and I don't have to worry about beginning to stutter or blushing. Everyone here is always friendly and open-minded. I've been a part of this online group from the very beginning and I am accepted and respected for my good ideas." Leila feels so comfortable around Maria and Chloe that she shares her biggest worries with them. And the best part is that she's never been laughed at or given strange looks. "And how should they," Leila thinks to herself, "After all, we can't see each other."

} Security, Group Affiliation
Appreciation, Attention

} Trust



EMOTION FUNCTIONS

FEAR

PROTECT YOURSELF!

ANGER

DEFEND YOURSELF!

SADNESS

COMFORT YOURSELF!



SHAME

WITHDRAW! /
MAKE UP FOR IT!

AVERSION

LET IT BE! /
GET RID OF IT!



AFFECTION

GET INTO CONTACT!

PRIDE

YOU DID WELL!
KEEP IT UP!

JOY

ENJOY IT!



THE CHAMELEON'S BOX OF TRICKS

You got to know and apply these tricks in our last session. Did any of these tricks do you any good or help you in any way? We will give you instructions to take home so that you can apply these tricks in everyday life.





THE SATELLITE

WHEN AND WHY?

Before being able to change your emotions, it is important to recognize and understand one's own emotional state.

AIM OF THE TRICK

How am I doing and why am I doing this?

If you manage to answer this question, you have accomplished the goal of this exercise.

HOW?

Now close your eyes and observe what is going on inside of you. Imagine floating like a satellite. Observe your feelings. IMPORTANT: The satellite is a silent observer who does NOT judge or comment. However, it observes very closely and asks questions so that you can get to know and understand yourself better:

Imagine you've just come out of school and had a bad day. Ask yourself the following questions:

- 1) How do I feel right now?
- 2) What thoughts are going through my head right now? Do I discover downers?
- 3) What does the feeling do to my body? Do I have a higher heart rate, a tingling sensation in my stomach, a lump in my throat? Am I nervous, cramped, tense? Do I have shaky hands? Am I turning red?
- 4) What would I most like to do now?
- 5) What are these feelings called?

Now open your eyes again! What did you feel?

Now close your eyes again! Imagine you go on the Internet. Here you do what you like to do best. Ask yourself the following questions:

- 1) How do I feel right now?
- 2) What thoughts are going through my head right now? Do I discover downers?
- 3) What does the feeling do to my body?
- 4) What would I most like to do now?
- 5) What are these feelings called?

Now open your eyes again! What did you feel?



INNER SAFE PLACE

WHEN AND WHY?

After the satellite has indicated what emotions you have and why you may have these, you can continue with the "inner safe place" technique which can change your emotional world. The inner safe place can help especially when you're feeling very angry or sad. It can help you to distance yourself from your negative feelings and help you to feel safe and calm.

AIM OF THE TRICK

The goal is for you to create a safe retreat in your imagination that you can return to whenever you feel overwhelmed and alone in reality. This place should make you feel safe and secure and it should be able to recharge your batteries for new tasks in real life.

HOW?

For the exercise you need:

- 10 minutes
- A comfortable posture (preferably while sitting or lying down)
- Attention fully directed to you and your inner being

To practice, have someone read the instructions to you a few times.

INSTRUCTIONS:

I would now like to invite you to get to know and shape your personal inner safe place. To do so, please find a position that is comfortable for you and in which you feel relaxed. Now, close your eyes and breathe in and out slowly and calmly. Focus only on yourself. Just let noise and other disturbances happen and pass on. It is okay if you aren't able to do so immediately. Do you feel ready? Slowly set out for your personal, inner safe place.

This place can be on earth, but it doesn't have to be. It can also exist entirely in your imagination. Let your fantasy and your thoughts roam free and just try to let yourself float a bit. You are standing at a place where you feel safe and comfortable. This place belongs only to you. Of course, it is your free choice to invite other beings to this place. These could be animals, people, or even completely different beings. You may also invite beings that only you might be able to see in your fantasy. I would advise you to only invite loving companions and helpers, though. Beings who support you and who give you love. These could be animals, people, or even completely different beings. You may also invite beings that only you might be able to see in your fantasy. I would advise you to only invite loving companions and helpers, though. Beings who support you and who give you love.

Now examine your personal place with all your senses.

What can you see? Is it pleasant? Do you feel comfortable with what you're seeing? If there should be anything you don't like you are invited to make any changes you want.

What can you hear? Is it pleasant? Do you feel comfortable with what you're hearing? If you do not feel quite happy with what you're hearing yet, just change as many things as you like until they are pleasing to your ears.



You may move and choose a different sitting position that is comfortable to you. Again, you may make any changes that you like.

How does this place smell? Are the smells pleasant? Just as before, you can also change the smells in such a way that you are as comfortable and happy as possible.

Now, how does this place make you feel in general? Do you feel safe and sheltered? Do you feel like this place can help you in difficult situations? Would you like to return to this place? It is important for you to be able to answer these questions with "yes". Create and change your inner place of well-being whenever and however you wish. Everything is possible.

Now slowly open your eyes and focus your attention on the room again. You may return to this place whenever you wish.

How do you feel? Did you find a place? When would you go to this safe place?



PROGRESSIVE MUSCLE RELAXATION

WHEN AND WHY?

You probably already have a good idea of which thoughts are causing negative feelings and you may be able to control these negative feelings with the thought stopping technique. If you may not be deeply relaxed, then Progressive Muscle Relaxation will help you!

AIM OF THE TRICK

The aim is to relax the body by tensioning and relaxing individual muscles.

HOW?

For the exercise you need:

- 10 minutes
- a comfortable posture (preferably while lying or sitting)

To practice progressive muscle relaxation, have someone read the instructions to you a few times.

INSTRUCTIONS:

Move into a position that is comfortable. Close your eyes. Try to keep your body as loose as possible and relax – your feet and legs, your stomach, your shoulders and your neck, your arms and your hands, and your head and face.

Now, concentrate on your feet and legs. Flex your legs, feet and toes as far as possible. All the other body parts should be relaxed while you are doing this. Imagine you are walking barefoot through a large, flabby mud hole. Feel the mud welling up between your toes. You must make sure to not slip and fall. Press your toes and heels into the ground. Do you feel how tense and hard your feet and legs feel? Now slowly relax again... Take a deep breath and feel the tension draining from your feet and legs. Can you feel how relaxed your legs and your feet are now? Allow this feeling of relaxation to sweep over you even more until your muscles feel soft again.

Now concentrate on your stomach. Imagine lying in the grass and hearing the bees buzz. Suddenly, a little elephant approaches you. It doesn't notice you laying in the grass and is going to step on you any second now. To be able to bear the little elephant's weight on your stomach, tighten your stomach muscles as hard as you can. Can you feel the foot and the weight of the little elephant on your stomach? Do you feel how hard and tense your stomach is right now? It's so hard that you can barely feel the little elephant walking over you. Now slowly relax your stomach muscles again. Take a deep breath and let the air stream into your stomach, until it's as round as a ball. Now slowly exhale and feel the tension leaving your stomach together with the air. Your stomach muscles are growing softer and softer and you're feeling more and more relaxed while doing so.

Now focus on your neck and your shoulders. Imagine being a little turtle lying on the beach by the ocean. Suddenly, you sense danger and must quickly pull your head back into your shell. Pull your shoulders up as high as you can, until your head is in between them. Your shoulders are your protective shell for your head. Can you feel how tense your shoulders and your neck are? And how hard your muscles are working to protect your head? Has the danger passed? Then slowly come back out of your protective shell. Let your shoulders move downward gently and stretch your neck upwards carefully. Inhale deeply. Feel your muscles loosen. Feel your shoulders return to a relaxing position.



Do you feel relaxed? Now focus on your arms. Imagine you are a cat. You've just finished a comfortable mid-day-nap. Before you can go climbing up trees and hunting mice again, you want to stretch your front legs and paws. Stretch your arms upwards as far as you can make them go. How do your arms feel while you're doing this? When you feel like you've stretched enough, let your arms glide down again in a relaxed motion. Again, take a deep breath and exhale slowly and evenly. Do you feel your arm muscles gradually relaxing and loosening up again?

Now, stay relaxed and concentrate on your hands. Imagine you are holding a lemon in each hand that you want to press the juice from. Clench your fists until the juice runs down between your fingers. Can you feel the strength and the tension in your palms and fingers? How do your hands feel? Allow the feeling to wash over you and examine it as closely as possible. Have you pressed all the juice out of your lemons? Then slowly relax your hands again.

Now concentrate on your face. Imagine sitting in the sun. Maybe in a summery meadow or at home on the terrace or the balcony? Suddenly, a fly appears, lands on your nose, and tickles your face. You are now trying to scare the fly away by scrunching up your nose as hard as you can. You should also wrinkle your forehead and your chin. Has the fly gone? Oh no, it's landed on your lips! Press together your lips and your teeth so it has no chance to crawl into your mouth. Phew, finally, the fly is gone! This means you can relax your face again. Inhale again deeply and try to appreciate clearly how your entire face relaxes.

Tighten your whole body once more. Your feet, your legs, your stomach, your shoulders and neck, your arms and hands, and even your face. Count to three in your head and then relax your whole body. Inhale and exhale deeply three times.

Now, you may slowly open your eyes. How do you feel? Take some little time to come back to this room and to the people around you.

How do you feel? How does your body feel?



THE GUMMY BEAR EXERCISE

WHEN AND WHY?

The gummi bear exercise is especially helpful if you feel like you are often subject to unpleasant events, thoughts and feelings.

AIM OF THE TRICK

When you're stressed, it's hard to concentrate on the current moment. Often your thoughts drift away and you don't notice what is happening around you. The following trick should help you consciously perceive what is happening in the current moment, e.g. how a gummi bear actually smells or tastes. ATTENTION: This trick needs some practice. Especially at the beginning, you may feel like this trick doesn't help you. Do not get discouraged and give the trick some time.

HOW?

For the exercise you need:

- 10 minutes
- a quiet place with seating
- 1-2 gummi bears
- all five senses
- if you want: a person who reads the instruction to you

INSTRUCTIONS:

Place the gummi bear on the palm of your flat hand. Now look at it from all sides. What does it look like? Which color is it? Is the surface more matt or shiny? What kind of shading does it have? Does it change when you hold it up against the light differently? How would you describe it to a blind person?

Now close your eyes and hold the gummi bear close to your nose. Take a thorough sniff. What do you smell? Does the smell or its intensity change?

Hold the gummi bear up against your ear and examine the sounds it makes. Can you even hear it at all? Or do you have to move it around for you to be able to hear something? How would you describe the sound? Listen carefully. First with the one, then with the other ear.

Keep the gummi bear in your hands. Now focus all your attention on your hands. Explore what the gummi bear feels like from all sides. Feel it between your fingers and describe the sensation. Is it smooth, rough, blunt or slippery?

Finally, put the gummi bear in your mouth and explore it with your tongue. What does it taste like? What does it feel like? Does its structure change over time?

Now place the gummi bear on your molar without biting down on it yet. Make a conscious decision to bite down on the gummi bear and chew it in slow motion. What does the gummi bear feel like now? Does the taste change?

Chew until the last bite. Prepare to swallow and observe in detail how you swallow it. Can you feel the swallowing motion? What does your tongue feel like after having swallowed?



Now open your eyes. You will now be given another gummi bear. Eat the second one just as you would usually eat a gummi bear. Compare your sensations with the eating process from before while doing so. Can you find differences?

What did you think of the exercise? Did you consciously perceive what the gummi bear tasted like? Did it taste different than usual?

TIP: Exercises like these can easily be integrated into everyday life. Not all five senses have to play a role, sometimes it can be enough to use one or two. For example, you could try to take a shower consciously, brush your teeth consciously or watch yourself closely at breakfast or dinner.

Index

A

- Addictive disorder, 3, 6–8
- Adolescence
 - adaptive emotion regulation strategies, 31
 - “Digital Natives”, 6
 - gaming addiction, 4–5
 - impairing factors, 19
 - individual characteristics, 18–19
 - online pornography addiction, 6
 - parental supervision and restrictions, 22
 - PROTECT etiology model, 32–34
- Assessment, 6, 11, 17
- Assessment for Computer and Internet Addiction-Screener (AICA-S), 11
- Associated problems
 - application-related factors, 23
 - contextual and environmental factors, 21–22
 - individual characteristics, 18–21
- Attention deficit hyperactivity disorder (ADHD), 10, 20
- Avatars, 4, 5, 23, 31

B

- Behavioral addictions, 30, 32
- Behavioral interventions, 34, 45, 47
- Boredom and motivational problems
 - behavior modification, 52
 - cognitive restructuring, 52
 - group rules, 53
 - homework and conclusion, 73–74
 - as a motive, 30
 - “PROTECT” portfolio, 52

- psychoeducation
 - blackboards, 58
 - chameleon, 62–64
 - “keeping balance” exercise, 56
 - pros and cons exercise, 53–55
 - vicious circle, 59–62
- susceptibility, 31, 33
- unfavorable cognitions
 - “change plan” training, 69–73
 - problem-solving technique, 73, 75
 - reality check, 64–68
 - thought stopping, 68, 69
- welcoming, familiarization and session goals, 52–53

C

- Change plan (problem-solving skills), 45
 - boredom and motivational problems, 69–72, 154–156
 - emotion regulation, 116, 124
 - performance anxiety and procrastination, 78–91, 165–167
 - social anxiety and friendship, 108, 110–112, 177–179
- Cognitive behavioral therapy (CBT), 34, 39, 40, 43, 46, 52, 124
- Cognitive restructuring, 39, 51, 64, 67, 75, 85, 88, 106, 124
- Comorbidity risk factors, 17
- Compulsive Internet use, 3
- Compulsive Internet Use Scale (CIUS), 11

Consolidating Standards of Reporting Trials
statement (CONSORT), 39
Coping, 31–33
“Cue-reactivity paradigm”, 30

D

Dejection, 62, 119, 186
Demandingness, 64, 65
Demandingness downers, 85, 105
Demandingness thought, 64, 84–8, 105
Diagnostic and Statistical Manual of Mental
Disorders (DSM-5), 7–8, 37
Diagnostics, 7–10
“Digital Natives”, 6
DSM-5 and internet gaming disorder
 educational/career opportunities, 8
 preoccupation with games, 7
 recreational activities, 8
 social and occupational domain, 8
 stop/control gaming, 8
 tolerance, 7–8
 withdrawal symptoms, 7
Dysfunctional emotion regulation, 31

E

Embarrassment, 119, 189
Emotion regulation, 21, 31, 33, 34
 “box of tricks”, 124
 characteristics of emotions,
 122–123
 definition of emotions, 120
 different emotions, 120–121
 functional strategies, 123
 mindfulness, 118, 124
 psychoeducation
 satellite, 117–120
 star of emotions, 117, 120, 121
 self-observation, 118, 124
 strategies, 124–129
Emotions, functions, 120–122, 191–193
Enthusiasm, 119, 185
Errors of reasoning, 64
Etiology
 behavioral psychology, 29–30
 cognitive behavioral model, 34
 integrated model, Internet addiction,
 30–32
 maladaptive coping, 31–33
 neurobiological etiology models,
 29–30
 PROTECT intervention, 32–34

F

Fear, 119, 189
“Free-to-play”, 4
Functional emotion regulation strategies,
 115, 123

G

Gaming addiction
 “free-to-play”, 4
 intermittent reinforcement, 4
 MMORPGs, 4, 23
 MOBA, 4, 23
 online gaming behavior, 5
Gaming disorder, 37
 diagnosis, 10
 ICD-11, 9
 See also Internet use disorders (IUD)
Gummy bear exercise, 124, 129, 200–201

H

Happiness, 63, 119, 190

I

Imaginative relaxation technique, 124
Indicated prevention, 38, 43, 46
Inner safe space (relaxation technique), 124,
 126, 196–197
Interaction of Person-Affect-Cognition-
 Execution (I-PACE) model, 31, 32
Intermittent reinforcement, 4
International Classification of Diseases
 (ICD-11), 9
Internet Addiction Test, 11
Internet applications, 3
Internet gaming disorder, 7–9
Internet use disorders (IUD)
 assessment, 6
 beneficial modification, 37
 challenges, 6
 characteristics, 18–19
 diagnostic instruments, 10–12
 DSM-5, 37
 etiology (*see* Etiology)
 gaming addiction, 4–5
 5HHTLPR, 31
 online gambling addiction, 5–6
 online pornography addiction, 6
 online shopping addiction, 5
 prevention, 38–39
 psychometric instruments, 10

- reinforcement mechanisms, 32
- risk factors, 33
- social network addiction, 5
- social withdrawal in depression, 12
- symptoms (*see* Symptoms)
- treatment, 39–40

L

- Learning theory, 30, 32
- Low-threshold approach, 44

M

- Maladaptive coping, 31–33
- Maladaptive use, 3
- Massively multiplayer online role-playing games (MMORPGs), 4, 23
- Motivational problems, 33, 44
- Multiplayer battle arena games (MOBA), 4

N

- Neurobiological etiology models, 29–30
- Neurobiological maturation, 6
- Neurobiological sensitization, 31

O

- Online gambling addiction, 5–6
- Online games, 3
- Online pornography, 3
- Online pornography addiction, 6
- Online shopping, 3
- Online shopping addiction, 5

P

- Pathological Internet use, 3
- Performance anxiety and procrastination
 - David's coping strategy, 81
 - psychoeducation
 - "*David has the jitters*", 78–81
 - sleeping balance, 77–78
 - vicious circle, 81–84
 - unfavorable cognitions
 - problem-solving skills training, 88–91
 - reality check, 84–86
 - thought stopping, 87–88
- Prevalence, 17–18
- Prevention
 - adolescence, 39
 - early stage, 38

- indicated, 38
- methodological deficits, 38–39
- RCT, 38
- school-based programs, 39
- selective, 38
- as "selective-indicated" interventions, 38
- subtypes, 38
- in Western countries, 38
- Problem solving, 34, 45–46, 69–73, 88–92, 110
- Progressive muscle relaxation (PMR), 46, 124, 127–128, 198–199
- PROTECT intervention
 - behavioral addictions, 32
 - behavioral interventions, 45–46
 - change plan technique, 45
 - cognitive distortions, 33
 - cognitive interventions, 34, 44–45
 - efficacy, 46
 - emotion regulation, 46
 - evidence-based approach, 47
 - indication, 43
 - internet use disorders (IUD), 43
 - low-threshold approach, 44
 - maladaptive coping, 33
 - reinforcement mechanisms, 32
- PROTECT+ treatment program, 43, 47

R

- Randomized controlled trial (RCT), 38
- Reality check (PROTECT), 64
 - boredom and motivational problems, 64–67
 - emotion regulation strategies, 124
 - performance anxiety and procrastination, 84–86
 - social anxiety and friendship, 105–107
- Risk factors, 5, 18, 22, 33, 44

S

- The satellite (exercise), 117–120, 124, 195
- School-based prevention programs, 39
- Self-monitoring strategy, 118
- Shame, 82, 119, 121, 190
- Short Internet Addiction Test (s-IAT), 11
- Social anxiety
 - friendship, 103, 111, 112
 - psychoeducation
 - keeping balance, 97–98
 - "*Leila is looking for friends*", 98–101
 - vicious circle, 101–104

- Social anxiety (*cont.*)
 - social insecurity, 106, 109
 - unfavorable cognitions
 - problem-solving skills
 - training, 109–112
 - reality check, 105–107
 - thought stopping, 109
 - vicious circle, 112–153
 - Social network addiction, 5
 - Social networks, 3
 - Star of emotions, 115, 119–122, 182–184, 197
 - STICA (short-term treatment for Internet and computer game addiction), 40
 - Structural Clinical Interview for Internet Gaming Disorder (SCI-IGD), 11
 - Substance-related addictions, 30
 - Symptoms
 - ADHD, 20
 - adolescence and young adulthood, 19
 - age effects, 18
 - application-related factors, 23
 - contextual factors, 21
 - depression, 19
 - family-related variables, 22
 - individual characteristics, 18–19
 - loneliness, 21
 - risk factors, 17–18
 - self-harming and suicidal behavior, 20
- T**
- Treatment
 - center, 39
 - clinical trials, 40
 - CONSORT, 39
 - evidence-based interventions, 39, 40
 - group-based interventions, 39
 - pharmacology/electro-acupuncture, 39
 - PROTECT, 40
 - STICA, 40
- V**
- Vicious circle, 112, 113, 149
 - boredom and motivational problems, 51–74, 160
 - performance anxiety and procrastination, 81–83, 172
 - social anxiety and friendship, 101–103, 180
 - Video game addiction, 3
 - Video Game Addiction Test (VAT), 11
 - Video Game Dependency Scale (CSAS-II), 11
 - Voxel-based morphometry, 30